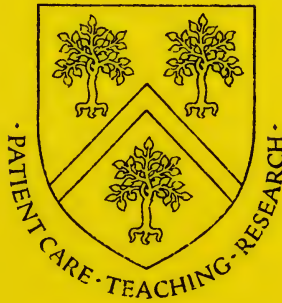


The Fabrick of Man



1913 *Fifty Years* 1963
of the Peter Bent Brigham



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The Fabrick of Man

Fifty Years of the Peter Bent Brigham

DAVID McCORD

Nature so ingeniously contriving the
irregular parts, as they become sometimes
more remarkable than the principal Fabrick.

Religio Medici

Published for the Hospital by the

FIFTIETH ANNIVERSARY CELEBRATION COMMITTEE

Boston: 1963

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OF THE PETER BENT BRIGHAM HOSPITAL

ACKNOWLEDGMENT IS MADE TO DOUBLEDAY & CO., INC.,
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A POEM BY THEODORE ROETHKE

PRINTED IN THE UNITED STATES OF AMERICA
BY THE ANTHOENSEN PRESS, PORTLAND, MAINE
DRAWINGS BY RUDOLPH RUZICKA

Foreword

IT is one thing to be ill in a hospital and quite another to be a privileged visitor—a licensed ambulatory—over a period of some twelve exciting weeks. A bed, a patient, a doctor, a nurse, and a cook do not constitute what the French call a *hôtel Dieu* in the way that Mark Hopkins, the student, and a bench might conceivably constitute a college. Whatever a hospital is, you may take my word for it that it evades precise description. Or so it is with the Brigham. One moment you are in a hotel, and the next in a surgical ward, dispensary, refrigerator, gas works; a caterer's kitchen, chemical factory, traveling greenhouse, amphitheater; gift shop, operating room,* recovery room, Edison's laboratory, sun parlor, dark room, steam tunnel, school master's library, warehouse, TV rental room, cafeteria, zoo, gymnasium, tool shop, blood bank, counting house, cellar, laundromat, placement bureau, nursing home, radiation stronghold, outpatient clinic, boardroom, automat, public relations office, tracer lab, information booth, picture gallery, bottling works, museum, lounge, the waiting room of a railroad station.

To assess all or even a fair part of this within a brief kinetic essay is a fair impossibility. Therefore I have tried to talk about essentials, to communicate something of the simplicity of design behind this welter of detail, to show the swing of the pendulum rather than the bowels of the clockworks, to let a handful of leaves in their venation suggest the tree itself; to bid the story of but three or four individuals acknowledge the story of literally hundreds. If these notes were all history, they could not even attempt to do justice to a living hospital on the side of spirit or ethos. The most I can guarantee is suggested balance: nothing has been slighted intentionally. The Brigham is a rounded hospital, and one of its many and newest strengths is gynecology, though I have scarcely mentioned it. And well do I know, for all his conviction, that an outsider can only describe and attempt to interpret; he does not truly speak the medical language. Sec-

* In hospital language, the OR.

tion 19, therefore, is a vigorous anthology of what various Chiefs-of-Staff and others have been saying, reporting, and prophesying over the years. It is, of course, the one important part of this small book. But the outpatient reader is requested to try the opening and final sections first. After that, he may discard his crutches and walk right through.

Not wholly unconnected with a hospital building now outmoded is this family feeling about the family estate which gives the Brigham such distinction and which, I am positive, has raised it over these fifty years to such enviable heights. "It is very difficult, of course, ever to repeat the conditions under which good traditions are formed," said Dr. William Thomas Councilman, first Brigham Pathologist, speaking more than forty years ago. "I think the greatest progress is made outside of tradition." Outside of what tradition? I would ask. Certainly not outside the tradition of freedom—one's measure of conformity to rules established, sanction of exchange between physician and surgeon, complete rapport between departments; between intern, resident, and Chief-of-Staff. And certainly not outside the tradition of the pioneer, when back of him is all the integrity and strength of the Harvard Medical School.

The Brigham was the first hospital in America to introduce the modified full-time program for professional staff, an idea which has subsequently spread throughout the nation, and to provide all day out-patient service. It pioneered in establishing a type of resident service which, by adding to the young house officer a more mature resident group, provided sounder training for the junior medical staff and better continuous service for the patients. Under the genius of its first chief surgeon, Dr. Harvey Cushing, and its first chief physician, Dr. Henry A. Christian, the hospital developed acknowledged leadership in the care of the sick, the investigation of clinical disorders, and the training of the doctors of the future.

Thus wrote Robert Cutler in 1938 when the Brigham was twenty-five years old. At the time of the hospital's fiftieth, I see no reason to alter or expand his words. As to my own and to all words borrowed: it would take five pages just to print a bibliography halfway to square my debt. But I have used footnotes freely: a) to substantiate a phrase or statement which a layman

writer might mishandle or might misapply; *b*) and also because footnotes, if cheerful and succinct, are seasoning to paragraphs concerned with facts or history. If they were fun to write, they may be fun to read.† I hope so. See section 9, note ††, p. 41.

For kindness and consideration, ideas and suggestions, help beyond help, I am indebted most especially to Alan Steinert,‡ whose eye takes in a phrase as a hawk's takes in a landscape, and to Charles B. Barnes and Richard L. Hall, members of the Board of Trustees; to Dr. F. Lloyd Mussells, Director of the Hospital; to four Chiefs-of-Staff, Drs. George W. Thorn, Francis D. Moore, James B. Dealy, Jr., Gustave J. Dammin; to Drs. Leroy D. Vandam, Carl W. Walter, J. Hartwell Harrison, Richard Warren, Thomas B. Quigley; Drs. *Emeriti* Samuel A. Levine, James P. O'Hare; to George Packer Berry, Dean of the Harvard Medical School and C. Sidney Burwell, former Dean; to Miss Carrie M. Hall, R.N. *Emerita*, Miss Margarita M. Farrington, R.N., and Miss E. Jane Deckert; to Mrs. George R. Minot and Mrs. Samuel A. Levine; for countless courtesies to Mrs. James C. Hopkins, Director, and Miss Patricia C. Gravallesse of the Public Relations Office; to Mrs. Norice M. Conant of the Fiftieth Anniversary Office; and to Miss Norma Appleyard.

For the basic material in sections 3, 4, 5 I have to thank Edgar P. Dean. I am also grateful to Robert W. Lovett, Curator of Archives in the HMS; Miss Ruth E. Linderholm, Assistant in Archives; Mrs. Gertrude Abramson, Librarian of the Nurses' Library at the PBBH; to Rudolph Ruzicka for drawing the head-piece and hospital arms; to Fred Anthoensen and Warren F. Skillings of The Anthoensen Press in Portland, Maine; to John L. Sweeney and Nathan Crary Shiverick; to Mrs. Sylvia L. Reynolds and Miss Constance R. Nelson for helping to prepare the typescript; to Miss Arline Wolf for proofreading the galleys, and for apting the inept.

D. T. W. McC.

† For the philosophy of this see another doctor—Dr. Johnson: "The notes of others are read to clear difficulties, those of Pope to vary entertainment."

‡ President of the Hospital; Charles B. Barnes is Chairman of the Board of Trustees; Richard L. Hall, Chairman of the Fiftieth Anniversary Celebration Committee.

For I shall always esteem it a favourable circumstance, that puts it in my power to administer relief to persons, whose indigence forbids them to expect it upon any other terms.

DR. JOHN MORGAN: *Medical Schools in America*

And I wrote ferociously that we learn resignation not by our own suffering, but by the suffering of others.

W. SOMERSET MAUGHAM: *The Summing Up*

But if the example of the Mite be not only an act of wonder, but an example of the noblest Charity, surely poor men may also build hospitals.

SIR THOMAS BROWNE: *Religio Medici*

I can always talk better to a medical man than to anyone else.

FLORENCE NIGHTINGALE AND THE DOCTORS

The operation wasn't bad. I quite enjoyed the trip up from my room to the operating parlors, as a closely confined person does enjoy any sort of outing. The morphine had loosened my tongue, and while we waited in the corridor for the surgeon to arrive, the orderly and I let down our hair and had a good chat about fishing tackle.

E. B. WHITE: *The Second Tree from the Corner*

The trained nurse has become one of the great blessings of humanity, taking a place beside the physician and the priest, and not inferior to either in her mission.

SIR WILLIAM OSLER: *Aequanimitas*

The secret of the care of the patient is in caring for the patient.

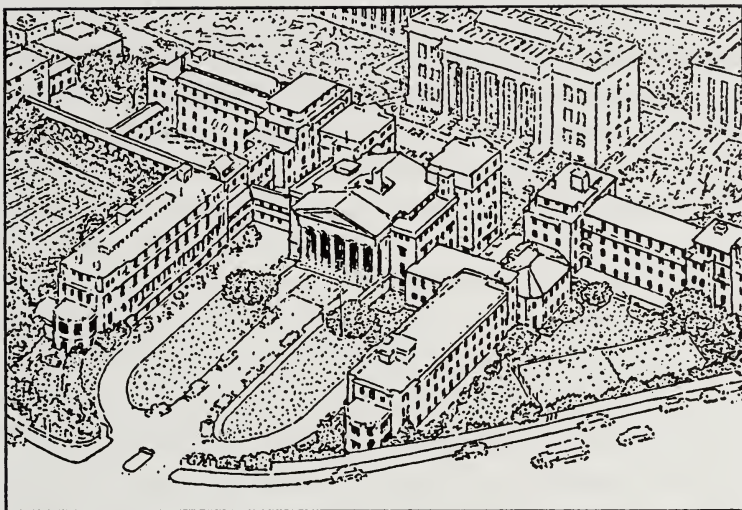
FRANCIS WELD PEABODY: *The Care of the Patient*

The Hospital is the only proper College in which to rear a true disciple of Aesculapius.

JOHN ABERNETHY: *Quoted by Osler*

And above all things have fervent charity among yourselves. . . . Use hospitality one to another without grudging.

I PETER, 4, 8-9



§ I

TURN it over in the mind for all you will, the first five institutions without which man may lose his bearings or his life are: home, school, library, church, and hospital. This is, of course, no order of the five against priority, but clearly one of sound—as in the final arrangement of a law firm's partners. Even so, the anchor words for man's biology are numbers one and five.

Home is the place where, when you have to go there,
They have to take you in.

The broken world, alas, is full of homes where Robert Frost's great hawser of a line might not apply; but it is hard to conceive of a hospital that will refuse emergency. It may not *have* to take you in, but it will.

When in 1930 Sir William Osler described all hospitals

as "those larger laboratories, private and public, which nature fills with her mistakes and experiments," he strangely neglected to add "misfortunes." For although one may argue that nature made a palpable mistake in permitting man the brain required to build an automobile or tax himself with wings, his highway-skyway crackups are nevertheless his own affair. Nor is it the work of nature when a girder swings, the sidewalk ices up, a gun is fired, or a window shatters, and an ambulance comes wailing up the street. But as to the kind and quality of mercy in the clinic, wards, and operating room, Sir William early and wisely says in *Aequanimitas*: "Here we learn to scan gently our brother man, judging not, asking no questions, but meting out to all alike a hospitality worthy of the Hôtel Dieu, and deeming ourselves honoured in being allowed to act as its dispensers." No statistician lives who could assess and answer yes or no to this for all the hospitals in the nation or the world. It is enough that the man who wrote these words inspected at an early date one particular hospital committed to a program of full-time clinical teaching. For he had in fact expressed a credo as *sui generis* for the Peter Bent Brigham Hospital of 1963 as it was in the minds of the founders just fifty years ago.

§ 2

PHARMACEUTICS has refined the art of putting powders into capsules; and I would borrow one for the moment and enclose therein the essence of the Brigham's fifty years to date. Take it as straight medicine—one swallow. The prescription for it derives from what Dr. Regi-

nald Fitz wrote for the twenty-fifth anniversary of the Brigham in 1938: "No man yet has gone through the hospital without acquiring from his chief four assets: a fearless love of truth; an earnest desire to advance medical knowledge; a respect for the proper and systematic recording of clinical observation; and something of the art of diagnosis and treatment."

Since 1913 the Hospital has had four Directors and one Acting Director—all of them doctors. Until 1944 the title was Superintendent. Dr. F. Lloyd Mussells, the present Director,* came to the Brigham in 1958. Dr. Victoria M. Cass was Acting Director 1957-1958. The first three Directors (Superintendents) were: Dr. Herbert B. Howard† 1908-1919; Dr. Joseph B. Howland 1919-1939; Dr. Norbert A. Wilhelm 1939-1957.

The same fifty years have been spanned by three Physicians-in-Chief, three Surgeons-in-Chief, six Pathologists-in-Chief. There have been but two Radiologists-in-Chief,‡ but the first dates back only to 1922, when the Brigham was nine years old. Physicians-in-Chief: Drs. Henry A. Christian 1912-1939; Soma Weiss 1939-1942; George W. Thorn since 1942. Surgeons-in-Chief: Drs. Harvey Cushing 1912-1932; Elliott C. Cutler 1932-1947; Francis D. Moore since 1948. Pathologists-in-Chief: Drs. W. T. Councilman 1913-1916; S. Burt Wolbach 1916-1947; Alan R. Moritz 1947-1949; Samuel P. Hicks 1950-1951; Clinton V. Z. Hawn 1951-1952; Gustave J. Dam-

* See section 22. † See section 11.

‡ Miss Carrie M. Hall (see section 11, ff.) recalls an early radiologist, when radiology had not yet begun to play a part in diagnosis, as "a great big gruff German," reasonably disliked, who had a sudden leave of absence at the outbreak of World War I and was not heard from again. He was Alfred Luger, invited to the Brigham early in 1913 by Dr. Harvey Cushing who had met him in Vienna. He died 10 July 1938.

min since 1952. One or two others have acted briefly in these various top positions.

Parallel to the course of PBBH history runs the Harvard Medical School whose closest teaching hospital, by design as we shall see, the Brigham has been from the first. The names of the five Deans of HMS, though the reader will really meet but one of them in this brief essay, are: Drs. Henry A. Christian 1908-1912, Edward H. Bradford 1912-1918; David Linn Edsall 1918-1935; Charles Sidney Burwell 1935-1949 (now, as *Emeritus*, engaged in preparing the official history of HMS—a history which will doubtless have much to say about the Brigham as well); George Packer Berry since 1949.

In fifty years, under these men and others;§ under Carrie M. Hall, R.N., *Emerita*, first Superintendent of Nurses and Principal of the School of Nursing; under a dedicated corps of Trustees, Interns, House Officers, Residents, Nurses, Dietitians, laboratory workers, orderlies, employees, secretaries, Friends of the Brigham—an astonishing small teaching hospital, with eighty per cent public wards and twenty per cent private, contending often with inadequate facilities, has greatly and honorably achieved for itself an enviable position both here and abroad.

Though not a yardstick of achievement—which must always be measured in terms of people, not in “first things” or in the written word—pioneering at the Brigham during its first fifty years includes the following:

Identification and development of a new field of surgery—neurosurgery, or surgery of the brain—by Dr. Harvey Cushing.

Discovery of liver extract as a specific treatment for pernicious

§ Remembering that Sir William Osler says in *Aequanimitas*: “Fully one-third of the work you do will be entered in other books than yours.”

anemia by Dr. George R. Minot and Dr. William P. Murphy: Nobel Prize 1934, with Dr. George H. Whipple of New York. The first mitral valve operation on the heart 1923: by Dr. Elliott Cutler. Since 1948, the field has advanced immensely (as we shall see) through the work of Dr. Dwight E. Harken.

Treatment and understanding of adrenal insufficiency—"Addison's Disease"—and the use of ACTH and cortisone by Dr. George W. Thorn.

First "chemical dissection" of the human body, measuring its total water and salt content by isotope dilution, by Dr. Francis D. Moore.

Development of blood banking, blood preservation, and use of plastic containers: Drs. Carl W. Walter and John G. Gibson, II. Development of the artificial kidney by Drs. George W. Thorn, Carl W. Walter, and John P. Merrill in 1948.

The first kidney transplantation between identical twins (isograft, 1954) and transplantations between unrelated individuals (homografts, 1952-1962) by a team of all four services, especially by Drs. John P. Merrill, Joseph E. Murray, J. Hartwell Harrison, and David Hume in the transplant work.

Development of the lactic dehydrogenase (LDH) test for myocardial infarction, pulmonary embolus, bladder cancer: Dr. Bert L. Vallee and Dr. Warren E. C. Wacker.

Beyond the thousands of Brigham technical papers written, published, delivered, and discussed, one must consider the books. Widely read and used are surely:

Harvey Cushing's *The Life of Sir William Osler*, 1925; *A Textbook of Surgery* by John Homans, 1931; Richard Warren's *Surgery*, 1963; *Clinical Heart Disease* by Samuel A. Levine, 1936; *The Principles and Practice of Medicine* by Osler, edited by Henry A. Christian (16th edition, 1947); *The Aseptic Treatment of Wounds* by Carl W. Walter (4th printing, 1958); *Metabolic Care of the Surgical Patient* by Francis D. Moore, 1959; *Principles of Internal Medicine* by George W. Thorn and others (4th edition, 1963).

§ 3

PETER Bent Brigham was born in Bakersfield, Vermont, 4 February 1807. Sixteen miles farther north, more or less, he would have been born a Canadian. The Brig-hams had lived in New England for six generations; and John Bent Brigham, who made the Atlantic crossing, arrived in 1638, just two years after the founding of Harvard College. His descendants took a prominent part in the affairs of Sudbury and Marlboro in Massachusetts. Uriah Brigham (1757-1820), whose wife was Elizabeth Fay, migrated to Vermont about 1796. His arrival in that greener state came midway in the decade of 1790-1800 when Vermont's population almost doubled; for in his day Vermont was to much of Massachusetts and Connecticut as California is in 1963 to the rest of the nation east of the Rockies and particularly north of the forty-second parallel. Uriah Brigham's death in 1820 left a widow and nine children, of whom Peter was the seventh. He was then thirteen; but not long after he made his way to Boston, traveling by horseback and by the new Middlesex Canal, which had been fully open to traffic since 1815.* In Boston master Peter prospered from the first, and when he died on 24 May 1877 in his Boston house at the corner of Bulfinch and Allston Streets, he was considerably more than a millionaire.

Young Peter started his career by selling fish and oysters from a wheelbarrow, advanced through the restau-

* Peter was likely (and paradoxically) too *late* for travel by steam. "Towing by steam power was abandoned on the Canal in 1820 and was never resumed." *The Middlesex Canal (1793-1860)* by Christopher Roberts, Harvard, 1938; p. 147.

rant business (cutting pies into six slices, says the legend, when five was the standard serving) and made his investments shrewdly in real estate and local railroads. For many years he owned and operated the restaurant in Concert Hall which stood at the corner of Scollay Square and Hanover Street. Built in 1754, Concert Hall was eclipsed in turn by the Musical Hall (1852) at the corner of Washington and Winter Streets, and finally by Symphony Hall round the turn of the century. Above Peter's restaurant, Concert Hall offered a large auditorium for receptions, soirées, and the playing of secular music. The restaurant itself antedated Peter's proprietorship; but until about 1850 it remained one of the favorite dining spots for State Street merchants, bankers, and lawyers. Peter Brigham retired from the restaurant business when Hanover Street was widened in 1869. During the last eight years of his life he gave full attention to real estate investments and to the celebrated† Fitchburg Railroad of which he was long a director. Most of our benefactor's holdings in real estate were concentrated within a half-mile radius of Scollay Square—some of them apparently on the shady side of a street long concerned with shadows.

Peter Brigham was honest in business affairs, held to his promises, had a fine personal appearance, never drank or smoked, and felt a great compassion for the poor. It seems a pity that he never held public office, municipal or state. He stood strong against slavery; and two canceled wills dated prior to 1862 show that he originally intended the bulk of his estate to be used for the emancipation of

† See Thoreau; also Kipling's "How the Whale got his Throat" in the *Just So Stories*: "Change here for Winchester, Ashuelot, Nashua, Keene, and stations on the *Fitchburg Road*." People forget that the *Just So Stories* were written in Vermont.

slaves. To the very end his judgment on land values, street widening, and municipal improvement was frequently sought by city officials. He died a bachelor and is buried in Mount Auburn Cemetery.

His final will provided that "at the expiration of twenty-five years from his decease the executors of his estate should dispose of the residue of his property and of all the interest and accumulations that should have accrued thereon for the purpose of founding a hospital in Boston 'for the care of sick persons in indigent circumstances residing in the County of Suffolk.' In this manner [continued Dr. Harvey Cushing in an Ether Day address at the Massachusetts General Hospital in 1935] he perpetuated his name to posterity and made himself one of Boston's great public benefactors."

To his native town of Bakersfield he left \$30,000 for educational purposes: a sum which established Brigham Academy in 1879. Other members of the Brigham family contributed to the purchase of a site for the new school; and in 1891 his sister, Mrs. Sarah Brigham Jacobs, willed the Academy \$100,000. As of this moment (like the hospital which bears Peter's name) the Academy still flourishes.

Peter Brigham's will, probated in 1877, showed assets of \$1.3 million. Real estate holdings in the North Station area exceeded \$300,000; holdings on the west side of Scolly Square (lower Washington Street) came to nearly \$300,000; notes of the Fitchburg Railroad accounted for \$200,000. Of the balance, variously invested, \$100,000 was in U. S. Government securities. Under the terms of the will, the Brigham estate was to remain untouched for those twenty-five years, at which time it was to be turned

over to a Peter Bent Brigham Hospital Corporation. By 1900 the book value of the estate had risen to \$2.8 million, and was appraised at \$4.3 million in 1902 when the hospital corporation took over. By this time, the original executors, Robert Codman and Joseph Healy, had both died and had been succeeded by Edmund D. Codman and Laurence H. H. Johnson. On 8 May 1902 the Peter Bent Brigham Hospital Corporation‡ was formed. On 24 May 1902, precisely twenty-five years after the death of the testator, the Corporation received from the trustees of the Brigham estate assets the extent of which would have pleased, and possibly surprised, the benefactor.

The Hospital Corporation, having been authorized in May 1902 by the Massachusetts Legislature to hold property in value up to \$5 million, soon was engaged on the narrow end of a lawsuit instigated by the Brigham heirs in the State of Vermont. The case was tried in the Federal Courts in Boston in October 1902. The Brigham heirs challenged certain steps in the way the will of Peter Brigham had been executed. The Federal Court ruled that the will had been executed properly. The Brigham heirs appealed; but in 1904 the U. S. Circuit Court of Appeals upheld the decision of the lower court. It is curious to observe that the Brigham heirs waited twenty-five years—or until the Hospital Corporation was formed—before taking action. The Corporation, apparently sure of its ground, wisely took no steps to settle out of court.

‡ Original members: Alexander Cochrane, Edmund D. Codman, Eben S. Draper, Henry S. Howe, Walter Hunnewell, Laurence H. H. Johnson, and William R. Trask. Augustus Hemenway was later elected a member; and in 1909, under the provisions of an amendment to its charter, the Governor of the Commonwealth appointed John P. Reynolds and Irvin McD. Garfield as state members for three and six years respectively.

By 1906 the book value of the Corporation's assets had reached \$5 million; by 1910 it was \$5.3 million. In 1911 the Hospital took title from the Harvard Medical School to land "already conditionally purchased."

§ 4

THE Peter Bent Brigham saga would not be complete without a word concerning his nephew Robert Breck Brigham, son of Elizabeth (Brigham) Brigham, Peter's older sister. Robert was born in Bakersfield, Vermont, in 1826, migrated to Boston in 1842 where he found employment in the Concert Hall restaurant owned by his uncle. He too prospered and acquired his own restaurant farther down Court Street. Poor health soon obliged him to sell, and he went to Florida (even as we do one hundred singularly odd years later) to recuperate. Upon his return to Boston in 1860 he bought the property at 642 Washington Street known thereafter as Brigham's Restaurant, and still later as Brigham's Hotel, facing squarely—for it still stands—into Boylston Street. Under a succession of names it was never the most fashionable of restaurants; and during World War II was known as the Silver Dollar. But "raffish or not [says Edgar P. Dean] Robert lived in the hotel which bore his name; and from this base of operation he amassed a fortune of \$3 million." The restaurant gave him his start, but shrewd investments in real estate largely account for most of this impressive sum. Uncle Peter restricted his real estate ventures to a very small area; Robert the nephew restricted his to one even smaller: all of them within a quarter mile of the

junction of Washington and Essex Streets. In 1883 Robert purchased the Hollis Street church, later converted into a memorable and London-sort of theater; and by the time of his death in 1900 he owned almost all the remainder of Hollis Street. He also owned the site and building which comprised the new Globe Theater.

When Robert died, the bulk of his fortune went to create the Robert Breck Brigham Hospital for Incurables.* In 1902 his executors purchased some ten acres of land on Parker Hill; and the estate, being permitted to appreciate in value for a good ten years (another parallel to the Peter story), finally provided the hospital dedicated in 1914.

§ 5

FLYING in a helicopter five hundred feet above the present concentrate of hospitals, medical and dental schools, which stretches roughly from the southern perimeter of the Fenway south to Parker Hill, the amateur mycologist might well conclude that all these proliferating mushrooms, benign and of a single genus, are one in age as well as one in function. With the exception of the Boston Lying-in and the Beth Israel Hospitals, this is virtually true. Of the eleven whose birthdays fall between 1906 and 1914 (an eight-year span) five are older and five are younger than our Brigham. This in a sense is to say—well, that Edward Lear* was born in 1812 as were

* The name was happily shortened in 1956 to the Robert B. Brigham Hospital.

* I choose Edward Lear (rather than a doctor) largely because I am somewhat familiar with his life.

Browning and Dickens; and that Tennyson (1809) and Thackeray (1811) are older, and Trollope (1815), Ruskin (1819), and Lewis Carroll (1832) are younger. In the table which follows, for *Lear* read *Brigham*, and for *Tennyson* and *Ruskin*, the only contemporaries who really touched Lear's life, read *Harvard Medical School*. At the same time, it is well to remember that a writer and a painter (and Lear was both) do not work oblivious of their fellow artists; nor is any hospital in a given community completely unrelated to any other—in staff, services, or research.

The Harvard Medical School on Longwood Avenue, first opened for the academic year 1906-1907, was dedicated by President Charles William Eliot on 25-26 September 1906. That year also saw the opening of the House of the Good Samaritan. The only hospital in the area to antedate the Harvard Medical School is the New England Baptist Hospital (1893) which moved to its present site on Parker Hill in 1902. The table of the eight hospitals, the Harvard Medical School, Harvard Dental School, and the Forsyth Dental Infirmary for Children,† arranged in the order of their opening, shows the first principal cluster 1906-1909, and the second 1912-1914:

1902	New England Baptist Hospital
1906	Harvard Medical School on Longwood Avenue
1906	House of Good Samaritan
1907	New England Deaconess Hospital
1909	Harvard Dental School
1912	Collis P. Huntington Memorial Hospital for Cancer
1913	Peter Bent Brigham Hospital
1914	Angell Memorial Hospital (for Animals)

† Not really of the Longwood community, yet near enough to be counted.

- 1914 Children's Hospital Medical Center
- 1914 Forsyth Dental Infirmary for Children
- 1914 Infants' Hospital
- 1914 Robert Breck Brigham Hospital for Incurables
- 1922 Harvard School of Public Health
- 1923 Boston Lying-in Hospital
- 1928 Beth Israel Hospital

Throughout the nineteenth century, and even down to 1910, Boston's hospital centers were the widely separated Massachusetts General‡ and the Boston City in the South End. The great shift in concentration was not complete until the Boston Lying-in Hospital opened its new buildings on Longwood Avenue in 1923.

Historical evidence strongly supports the notion that the huge medical center—it was not originally so called—based on Longwood Avenue would not likely have assumed its present form had not the will of a man born in Vermont provided for the creation of a great new hospital. As early as 1900 the Peter Bent Brigham Hospital—still thirteen years short of existence—became the key factor in the overall complex design. “Chronology gives a misleading impression.”§ Between the opening of the new Harvard Medical School on Longwood Avenue in 1906 and the Brigham's opening in 1913, some half-dozen hospitals had been built in the immediate surrounding

‡ The Massachusetts General today includes, besides the Baker Memorial and the Phillips House, the Huntington Memorial Hospital Clinic and Laboratories, the Joseph P. Kennedy, Jr. Laboratory, the Vincent Memorial Hospital, the Hall-Mercer Hospital, the Burnham Memorial for Children, and the McLean out in Belmont. The adjacent Charitable Eye and Ear Infirmary not long since dropped off the Charitable adjective; but elsewhere in Boston The New England Home for Little Wanderers has preserved intact the charm and music of its original name.

§ Edgar P. Dean, Librarian of The New England Historic Genealogical Society.

area. It would seem on the surface that these hospitals sprang to life because they were generic. The Harvard Medical Faculty, however, began to think seriously of a new physical plant at some remove from Boylston Street only *after* they had reached an informal agreement with the executors of Mr. Brigham's will respecting a hospital which, from the Harvard point of view, would be a teaching as well as a charitable institution.

There were other considerations. During the last quarter of the nineteenth century the geometric progression of medical knowledge demanded new methods of instruction. Lectures on the theory of medicine became the prelude to clinical teaching as we know it today: instruction at the bedside in the hospital ward. Back in 1903 Dr. Osler had spoken of the hospital as a college; and in 1925, in a talk at New Haven, Dr. Cushing said, "I do not believe that students can begin to think in terms of the patient too early in their course, nor too early begin to interpret and record what they see, hear, and touch—perhaps even smell and taste—at the bedside."||

This new concept of clinical teaching produced (as Mr. Dean has summed it up) "a head-on collision between the Faculty of the Harvard Medical School and the staff of the Massachusetts General where most of Har-

|| I recall one lucky evening during my Senior or graduate year at Harvard when President Emeritus Eliot spoke to a small group of us in the very room in Holworthy Hall which he himself had occupied as an undergraduate. His subject was the emergence of the Harvard Medical School during his forty years' tenure of office. He made it graphically clear that under a medieval system a medical student obtained his degree on the basis of passing five out of nine courses. (I have checked this startling fact in *Fulton's Harvey Cushing*, p. 84. See full note on page 36.) Thus a man might fail in such an important subject as pharmacology and still be licensed to dispense the cheering placebo or pull down the deadly nightshade with too many minims (drops) of laudanum, that opiate which loosely calls for praise by name.

ward's bedside teaching was accomplished. At the General, seniority prevailed in filling all the top (or chief) positions. If the Medical School wished clinical instruction in surgery, for example, the Surgeon-in-Chief at the General (a post arrived at by seniority) would have to become a member of the Harvard Medical School Faculty. This quite naturally deprived the Faculty of choosing a gifted teacher as above a purely gifted surgeon. So far as the General was concerned, the ultimate solution was for the HMS Faculty and the MGH Trustees to agree on important new appointments; but the MGH did not completely accept this policy until along in the 1920's."

Furthermore, Mr. Dean continues, "Medically-imaginative Boston was tormented by the example of the new and dazzling success of the Johns Hopkins Medical School. The Hopkins not only introduced to American medicine many European discoveries and techniques, but the Medical Faculty controlled its teaching hospital appointments simply by owning and operating the hospital in which they were made." The university hospital in Baltimore (1889) antedated the Hopkins Medical School (1893). The price of this, however, was to put Johns Hopkins University "squarely in the hospital business." Would the Harvard Corporation—a self-renewing body of shrewd men—be equally tempted? It would not. But when President Eliot in his inauguration in 1869 said: "We aim to build here a university in the largest sense," he had the Medical School most firmly in mind. He described it, as he found it: a kind of trade school run by doctors to train up young practitioners and teachers under a system in which pure medical research was secondary. He observed that a Freshman entering Harvard

College had to present more qualifications to enroll for the Bachelor's degree than a young man entering the Medical School in search of his M.D.

Perhaps no other hospital in America ever endured so long a period of gestation as the Brigham. Although the Corporation was not formed under the General Laws and organized until 8 May 1902, with Alexander Cochrane as the first president, it was in the Boston of 1900 that three possible sites for the institution were considered. The first of these was a tract of land at the Cambridge end of the Harvard Bridge: the ground now occupied by the Massachusetts Institute of Technology. This possibility could have been disposed of, one might contend, simply because it did not lie in Suffolk County and could not possibly meet the terms of the will. The second site was ground now occupied by the Harvard Business School in Allston—definitely a part of Suffolk County. But the Charles River Dam was not built until 1910, and since this area flooded easily in the spring, it was ruled out even though President Eliot and certain members of the Medical School Faculty favored it. Yet had the area been high and dry in 1900, there was the further vital matter of public transportation. The time was still years short of the subway from Park Street to Harvard Square, and the principal effect of the automobile as yet was the sudden problem it presented to the frightened horse.

The site chosen was the Ebenezer Francis estate in Roxbury overlooking the vast and liquid acres of the old Back Bay and Muddy River. In all, for strictly medical use, some 1,100,000 square feet of land were purchased. Of this tract, Harvard reserved about 500,000 square feet for the new Medical School; the Brigham executors some-

what more than 400,000 square feet; and the Children's Hospital rather less than 200,000 square feet. Alexander Cochrane's first report as president of the Brigham Corporation refers to the site in 1911 as "already conditionally purchased": this condition clearly predicated on the successful outcome in 1911 of prolonged litigation.

In short, the Peter Bent Brigham Hospital, purely as an idea and not a reality, was a determining factor in the formation of the Longwood medical community at a time when the only hospital in the vicinity was the recently moved New England Baptist on Parker Hill. By the turn of the century the HMS faculty and the Brigham executors were in agreement on joint Faculty-Hospital appointments, and this encouraged such individuals as Dr. J. Collins Warren to go out for—and raise—\$3 million for the Medical School buildings which opened their doors in 1906. As the dream took shape, it was clear that the Brigham would begin life with what we are likely to call *status*, or with what our forebears would have referred to as *stature*. The hospital would not need to suffer a trial run to establish slowly the order of seniority in promotions. It would be staffed from the beginning with eminently qualified teaching-doctors and teaching-surgeons, a few of them nationally famous. In this sense the Peter Bent Brigham Hospital did not have to achieve greatness: it was born into a greatness that could not be denied. For that available \$5.3 Brigham million of 1910 *was almost one-quarter of the then total endowment of Harvard University*. And fifty years later in time and economy it is significant that the Hospital has surely lived *up* to its inheritance if not on it.

§ 6

EARLY in life we learn that nature favors threes and fives: the clover leaf, the white pine needle-cluster, trillium, the common starfish. The "modern and commodious charitable institution for Suffolk County," the plans of which were given to the Boston public in the *Herald* for 12 August 1912, was clearly concerned with twos, fours, and sixes: the expected six great pillars under the classic pediment of the main building facing south, four twin pillars in the rotunda as one enters, the Clinic and Ward A paired and flanking the main court; four pavilion wards (C, D, E, F) branching off southwest-northeast along a tunnel called the Pike; a brace of buildings to the rear of Administration, running south of east and north of west along Shattuck (formerly Van Dyke) Street opposite the Harvard Medical School.

Dr. Reginald Fitz, preparing the quarter-century monograph on his beloved Brigham (1938) does not mention the Hospital's planner. He was Dr. J. S. Billings, sometime Assistant Surgeon General, U.S.A. The architectural firm which successfully competed with a design following Dr. Billings' basic plan was Codman and Despradelle of Boston. In a time of architectural verticals it is hard to realize the early Brigham: planted,* unwalled "with an unobstructed view of the Fens . . . a beautiful and imposing ensemble." Today it seems an almost implausible as-

* "The work of the Planting Committee is a source of pleasure to everyone at the Hospital, particularly the patients who can be on the porches during the warm weather." *From a recent report of the Friends of the Brigham.*

semblage of the mildly ornate. But there it was as here it is. Wards C, D, E, and F obeyed the code of Florence Nightingale† who demanded that hospitals be pavilions; and these on the old Francis estate were duly “fitted up with pergolas, sunrooms, and wide verandahs for convalescents.” They are four stories high in front and two stories high in the rear. The entire group is of brick and terracotta. In the beginning it was all praised, among other things, for its seven and one-half miles of excellent sewerage.

The new Brigham won an architectural prize. But the prize which, in retrospect, might be awarded both planners and architects is a special prize for having spread the butter so very wisely on so large a slice of toast. The original Brigham land was some ten-plus acres with a frontage of 480 lineal feet on Huntington Avenue and 900 feet down Francis Street. Pavilions and sunlight naturally called for space. Much of the available acreage was therefore covered; and today as the Hospital looks forward to new architecture and space consonant with plans for the Medical Complex to come, it does possess the land on which to grow.

† “The Pavilion Plan [she wrote in 1858], while it is incontestably superior, on sanitary grounds, to any other, while it perhaps may be made equally economical, with regard to building, is more expensive than the older crowded and badly-constructed Hospitals. Human life is, however, a more expensive article than any other.” Her advice had been sought by Dr. Billings in 1876, says Zachary Cope in *Florence Nightingale and the Doctors* (Lippincott, 1958, p. 147), in the proposed building of the Johns Hopkins Hospital. Dr. Carl W. Walter of the Brigham tells me that Sir Spencer Wells, the ovariologist and contemporary of Lister, had advocated our pavilions; but in the volume just cited (p. 105) the then *Mr.* Wells is criticized by Miss Nightingale for *not* operating in the country. Wells’s mortality in ovariectomy, however, had been reduced “by cleanliness and isolation” to eleven per cent by 1882. In 1858, when Miss Nightingale was promoting pavilions, Wells was only forty.

One remembers that Dr. Cushing had a curious inability to visualize the detail of any building from blueprints or elevations. Medical wards of the Brigham were rightly for Dr. Christian to design or at least to indicate in useful detail. Dr. Cushing apparently assigned him also the surgical wards; which accounts for some of their more obvious limitations from the surgeon's point of view. Dr. Cushing, however, could be in a rush to get things done—he had a disconcerting way of waiting till the last moment to catch a train or a boat—and he early upset President Cochrane in wanting the building ready by October or surely by 1 November 1912. Ground broken 7 August 1911, it took but two years, more or less, to put the Brigham into action in 1913, that last year of the blithe old world, with doors opening from April to October.‡

“It is only by being intensely English that one can love Paris,” wrote Havelock Ellis. It is (or was in its heyday) only the Frenchman who took a shine to Harvard's massive Memorial Hall. But if the Brigham of 1963 lacks admirers of façade or interior or any part thereof, this hive of perpetual activity is home enough to the highest quality of bees, and they have honeycombed it inside out (the symbol six again) for all its golden worth.

No doubt in the beginning the rotunda, what with the handsome west, north, and east galleries which somehow suggest a hexagon, was more impressive architecturally than it is today, when the northern end of it is occupied front to rear by *a*) the information desk, *b*) a gift shop, *c*) the coffee shop. The eye at once takes in two portraits: one§ of Robert Cutler, Brigadier General U.S.A., Re-

‡ Even the ambulance went into service 29 October 1913.

§ The one just down the corridor: Dr. Norbert A. Wilhelm, third Su-

tired, and President of the Brigham Board of Trustees 1948-1958, now Honorary Chairman; another of Dr. Samuel A. Levine, Physician *Emeritus*. It notes perpetually climbing or descending the double flight of stairs, just right and left of the main desk, fifty-seven framed photographs and studies of the great in medicine and surgery; among them, from two hemispheres: Harvey, Delafield, Weir Mitchell, Lavoisier, Benjamin Rush, Osler, Babinski (a certain reflex bears his name); William Henry Welch, Austin Flint (eponym for a special murmur in a stethoscope). From the waiting room|| of the Physician-in-Chief, up one flight to the left in the rotunda, the big glass window gives an excellent view of all the small grand-central of activity below.

§7

BACKBONE of this “shack of organized enterprise” —a phrase of Kipling, as any reader over fifty might imagine—is your 220-yard brick Pike;* and to speak of “The Pike,” as will a doctor on his rounds, is a mark of affection amounting to what Harvard College graduates still lavish on an ancient Yard which elsewhere would be called a campus. As to that adjective, *ancient* itself is a not inade-

perintendent of the Brigham (1939-1957). Dr. Herbert B. Howard, first Superintendent (1908-1919), and his successor, Dr. Joseph B. Howland (1919-1939) are represented by portraits hanging at opposite ends of the north gallery.

|| A couple of now famous Andrew Wyeth reproductions wait there permanently.

* Not quite the London Tube nor a tunnel of love; remembrance of Shirreff's wine vaults, the Atlantic City boardwalk, the longest hotel porch in the world, a mineshaft under sea. Not quite, but not quite not.

quate word to describe this human conduit which runs or flows on upper and lower levels; the lower carrying the braided pipe† and wires as well as solid goods in crates and cartons pushed or pulled on wheels and dollies. Oddly enough, the lower level, if not gay, at least is harlequin with grey-black squares of battleship linoleum on the floor; the upper somewhat somber under foot with conventional squares of concrete paving. What one mainly sees below is workers' work in progress, laundry wholesale and in transit, plastic disposal bags of waste in exit, deliveries in entrance, temporary storage of building materials, apparatus, plywood, glass: a tunnel green with those steel lockers that enlightened high schools first installed in corridors five decades back. None of it lacking interest for the curious or fascination for the writer; none of it quite free of bandages and obvious tubes of oxygen or food for him or her in passage from one somewhere to another. All up and down the length, above—below, one senses more than one confronts such hallmarks of the ill. And hurrying east and west on rubber heels in calculated silence go the nurses, doctors, interns, residents, orderlies, lost visitors.

I take the lower level if and when I can, to mark what's going on, what's new among the flotsam. As with the upper level, it begins (or ends) at the busy parking lot midway between Huntington and Brookline Avenues, and parallels‡ two others: Shattuck Street to the north and Francis to the south. It dares and scares me east toward

†A green pipe for oxygen and danger; a large red one for the sprinklers.

‡ Actually, the Pike curves a little, with its bulge to the south, like a longbow barely flexed. More than thirty years ago in Paris I wrote that all good streets are parabolic. Curvature is one of the charming characteristics of Mt. Vernon Street on Beacon Hill. It adds a sense of mystery to the Pike.

Main: to Clinic and Emergency. Doors open now and then to right and left: caves yawn me into tool shop, plumbing, maintenance, records (case histories), instrumentation, mystery, detours into make-do Miss Bianca country. Up, down, and roundabout I read and follow signs, act and react, look and look away, investigate, avoid: Tumor Group Office, Surgical Artist, Acid Room, Metabolism, Fallout Shelter, Linen Supply, Biomathematics Lab; Laundry Chute, Chest Clinic, Drug Store, Brigham, Biophysics Research Laboratory, To Amphitheatre, To Blood Donor Room; Cystoscopy, Engineering, No Smoking, Main Sprinklers Shut Off, Do Not Store Beds in this Area; Do Not Enter: Central Supply Room. The *sursum-corda* sign proclaiming:

PHYSIO BEYOND THIS DOOR

reminds me in reverse of Robert Benchley's drawing of a man's head sliced from top to bottom showing nose, mouth, teeth, palate, larynx, tongue, and so on; with an arrow pointing down the throat, the caption reading:

PRETTY DISAGREEABLE BELOW HERE

I pause before a load of empty bottles, clean and scheduled for their destination. They are loudly labeled: Distilled Water, 5% Dextrose in Water, Cushings, § I.V. Saline. One bulletin board divides itself: Staff, Housing, Miscellaneous. Another large one sticks to general activi-

§ Cushings is a Harvey Cushing intravenous solution; I.V., *Intravenous*. W. H. Auden, sauntering through the passages of his Inaugural Lecture as Professor of Poetry at Oxford in 1956, speaks with true (not surfeit) wisdom of the poet's liking for lists of proper names. The listing Pike may lead one to the unsuspected: to *The Dyer's Hand* (Random House, 1962), for instance; to the reference I mention (you will find it on page 47) and to unaccountable pleasures of the Auden mind.

ties, physical developments, the Hospital in the press, local and public announcements. Still another will display the programs of visiting medical groups, the surgical artist's drawings appertaining, and the like. A Safety Bulletin Board shows graphically in red and black the work days lost over a three-month period by accident or illness in such areas as nursing, housekeeping, laboratories, maintenance. In a phone booth is the cryptic message o-o-o for you to solve. I could add one apposite sign in one-inch letters: a passage from *Of Ants and Men*.¶ I would place it halfway down the quiet Pike at either level.

Pressure for room is felt by the fortunate colony in its narrow internodal chamber, and, emboldened by its increased numbers, it perforates the septum which sets it apart from its neighboring community.

By cunning contrast, then, Pike upper level is more social; windows light you on between the alphabet of buildings (the pavilions, really) abruptly pinnate, as a botanist would say of leaves, where Wards, A, C, D, E, and F stem north and south. Toward evening, or on slow dark days, the upper Pike shows signs of levitation and takes on the glassed-in look of tourist-class deck B on an old Cunarder an hour in advance of evil weather. All that is wanting are the steamer chairs with Maugham the novelist or David Niven the actor at his tea, or a brace of weathered matrons, queasy but not yet for the rail. One passes through doors swung at intervals as through the bulkheads of a ship.¶ Sir William Osler, self-styled "ob-

¶ Caryl P. Haskins; Prentice-Hall, 1939. Elsewhere I define the Brigham as a hive, which seems the obvious metaphor. Obvious also to Harvey Cushing who (I now discover) used it in his MGH Ether Day Address in 1921.

¶ But the old charm is on the wane: a few of them now open of them-

server of disordered machines," would here be most at home, for this has not the flavor of the antiseptic hallways of hotels of God. This is Boston near the turn of the century that straightened out along the axis of Young's Hotel and Mechanics Hall, or from the Union Oyster House to the old railroad depot dear to Salem. Nor should it be forgotten that when the Brigham was young the upper Pike was unenclosed. In winter men in white might face a drifting blizzard as they plunged their way from ward to ward. But then in summer it was all idyllic color, I am told, with waves of blossoming wistaria, pavilion to pavilion.

The Pike at any time is an excursion under a spongy spell of charm. It is hard to keep clean; it puts pedestrian yardage between the Transplanters and Pathology, between the Head Nurse and Linen Supply, between the Emergency Ward and the Blood Bank, between Medicine and Surgery.** The Pike remains vestigial; a passage Alice surely would have recognized. Capped nurses, human wreckage on the fleet-foot bed, old ladies shawled and hopeful in wheel chairs on diverse errands, lolling Walrus full of barium. Might not the Red Queen now be passing by? Or the Pike is a passage out of a passage in John Betjeman's gathering of churches, railway stations, landmarks of his private London: *First and Last Loves*, if you care to look it up. Each casual journey down past starch and stethoscope, past anxious relatives, past children not quite knowing where they are or why it's here; past out-

selves with supermarket welcome. A brief section or two of the upper level has semi-opaque blocks of glass for windows; the umbilical from the Pike over to the Children's Hospital is modern by any Brigham standard.

** Best known of various light-hearted descriptions of the Brigham: "The world's best medicine under the world's worst conditions."

grown memories and ingrown tremors, past man the mender, woman the attender; past comfort and past pity, past all courage and past joy—one's final word for it is Betjeman's very "endness of the end of the line."

§ 8

IN the thirty-eighth annual report (1952) Dr. Samuel A. Levine, "distinguished and beloved cardiologist," as Dr. Thorn describes him, has some good mulled words to say about Dr. Henry Asbury Christian, first Physician-in-Chief of the Brigham, who devoted years of continued service and unremitting inspiration to the Hospital—endemic inspiration still in evidence today. Dr. James P. O'Hare (now emeritus) who had even earlier served with Dr. Christian at the Carney,* recalls him as a man

* Dr. Christian left the post of Physician-in-Chief at the Carney Hospital to come to the Brigham. His appointment, like Dr. Cushing's, came in 1910. Dr. C. Sidney Burwell has generously given me copies of two unpublished letters relevant to this event. On May 19 President Lowell wrote Dr. Christian: "I think we may feel that one-half of our problems are over now that the arrangements for your becoming Physician-in-Chief of the Brigham Hospital are complete." On May 26 President *Emeritus* Eliot wrote him: "Now that you and Dr. Cushing have been put at the head respectively of the two Departments of the Brigham Hospital, I feel as if the Medical School were entering on a happier future. Ever since I have been a member of the Medical Faculty I have seen clearly what a handicap on the School it was that the University had no hold on hospital appointments. Hereafter the School will be able to search all over the country for the very best men to fill vacancies.

I hope you will see your way by and by to change the tenure of heads of departments of the Medical School. The heads are generally senior officers of the department, and they serve indefinitely, and indeed, for many years. The method used at Cambridge of changing the head of a department every three, four, or five years, but irregularly, is, I am sure, a great deal more effective ... [though] not applicable in all departments of the Medical School. . . .

A man of very scientific spirit who is a great friend of the [HMS] said

“aloof and austere, but very kindly.” Far from aloof in reminiscence, Dr. O’Hare refers to his former Chief not only as “the Professor” but frequently as “Uncle Henry,” the more affectionate title by which his intimate friends addressed him. If Christian and Cushing did not always hit it off together, there is engaging evidence in letters and in testimony of colleagues like Dr. O’Hare that Uncle Henry was skilled in pouring oil on troubled waters. Indeed, it was he in 1923, at the time of the Brigham’s first reunion, who began to talk of “the Brigham family.”

A graduate of Randolph-Macon College, Dr. Christian took his medical degree at the Hopkins in 1900, becoming one of the early group of medical men in Baltimore who set out east by north for Boston. In this stalwart act of immigration his name is linked with those of Cushing and Councilman.† Dr. Christian was Physician-in-Chief of the Brigham from 1912 until his retirement in 1939: a period bracketed by his longer tenure of the Hersey Professorship of the Theory and Practice of Physic at the Harvard Medical School (1908-1939). He served as a

to me the other day “There is too much luxury in the research laboratories of the Harvard Medical School, too many servants and typewriters and medical assistants. The expenditure for all these things is heavy, and the money might be better employed.’ I was always in favor of providing teachers and investigators with all possible mechanical aids, provided that the teacher or the investigator did not put over into inferior hands work he ought to do himself. Is there ground for the criticism quoted above about our Medical laboratories? People who live in an extravagantly spacious house are apt to be extravagant in other directions. . . .”

† Dr. William T. Councilman, the Brigham’s first Pathologist (1913-1916). In a sketch of Dr. Councilman (*The Saturday Club*: see note, p. 41) Cushing says: “Disturbed by the architecturally unadorned exterior of the new hospital [the Brigham], he personally selected, planted and during his odd hours cultivated the well chosen varieties of rambler roses that still surround it; and when so engaged, nothing gave him greater delight than for passers-by to mistake him for the official gardener.”

major in the medical reserve corps in World War I; and during World War II (1942-1946) was Clinical Professor of Medicine at the Tufts Medical School. His specialty was diseases of the heart and kidneys, but his writings and studies covered the general field of internal medicine. "He is one of the few remaining illustrious medical figures in this country [wrote Dr. Levine] who stemmed from the early Osler days of the Hopkins Hospital. He was primarily a clinician of the descriptive type, with a thorough background of pathology. His era antedated the great period of physiological and chemical emphasis that prevails today. Although in his early years he conducted animal experimentation, studying nephritis [including Bright's disease] and myocarditis [muscle of the heart wall] in rabbits, thereafter his attention was entirely directed to bedside medicine. He was a meticulously careful observer and was quick to see clinical entities . . . peculiar or discrete. In this way he described certain syndromes that now bear his name, such as "Hand-Schüller-Christian Disease."

Dr. Levine points with special approval to Dr. Christian's gift in the field of medical administration. He was made Dean† of the Harvard Medical School as a youngster of thirty-two and "was amongst the early leaders to stimulate a spirit of medical research in the Faculty." An even greater accomplishment, says Dr. Levine, "was the development of the medical clinic of the Peter Bent Brigham Hospital. Due to his wisdom and foresight this clinic immediately obtained a predominant position throughout the world. He incorporated a scientific spirit with one of

† Charles William Eliot at thirty-five was the youngest man in Harvard's history to become president. The record is still unbroken.

kindliness and care of the patient that proved to be a model for academic institutions. He was amongst the first to institute the system of resident training in this country. He was meticulous about recording observations, both clinical and laboratory [as was Dr. Cushing], so they might be available for research purposes. The records at the Brigham set an example for students and interns that has since been used everywhere." Both Dr. Levine and Dr. O'Hare characterize "the Professor" as an exacting person who did not ask of others what he would not do himself. "He would not tolerate laziness or tardiness. . . . One could set one's watch on hearing his footsteps approach the ward when he was to make his morning rounds at ten o'clock." He could be sharp in authority, but permitted no one else to say a word against his flock. He was bald; and when he was angry, says Carrie M. Hall, "his head would light up."

It was Dr. Christian who instituted the "most pleasant and valuable custom" of having an annual physician-in-chief in brief command *pro tempore*.§ During that very special week, "the Professor" would give one of his choice dinners which became famous in medical circles. The same table cloth was always used for these affairs—generally at one of the Boston clubs, such as the Tavern or St. Botolph—and those present were invited to write their names along the margin. These signatures were subsequently embroidered into permanence. The table cloth,

§ The first Physician-in-Chief *Pro Tempore* was Sir Thomas Lewis (1914). Three others in later years were Lord Thomas Jeeves Horder (1936), Dr. Warfield T. Longcope (1917, 1939, 1946), and Dr. W. Barry Wood, Jr. (1952). Past Surgeons-in-Chief *Pro Tempore* (there were none at first) include Sir Gordon Gordon-Taylor (1936 and 1941), Sir James Paterson Ross (1953), Dr. Edward D. Churchill (1962).

like inherited jewels, is now firmly locked in a bank vault.

The Christian clinic proliferated into clinics elsewhere, often involving the service of some teacher-doctor once (and perhaps always at heart) a Brigham man. || “Nothing pleased him more [concludes Dr. Levine] than to watch the successful progress of his former pupils and residents.”

§ 9

I wake to sleep, and take my waking slow.
I feel my fate in what I cannot fear.
I learn by going where I have to go.

THEODORE ROETHKE

THE public image of Harvey Cushing is very simple: a pioneering neurosurgeon, daring and effective, whose international reputation is justly secure. In the layman's language he was a brain surgeon, which implies that he operated on the brain itself. In practice he dealt largely with meningiomas: tumors pressing down on the meninges, those three membranes which envelop the brain and spinal cord; with tumors called medulloblastomas* which occur and recur in children; with endocrine (glandular) problems—the pituitary in particular. From the start of his career, Dr. Cushing was an innovator, craftsman, exemplary teacher; rigid disciplinarian, indefatigable and

|| When Dr. John Homans, at Dr. Cushing's suggestion, was once invited to serve for a year at Yale as Acting Professor of Surgery, “He conducted clinics and ward rounds in the Brigham tradition, his humor delighting students and staff alike.” *Harvey Cushing* by John F. Fulton, 1946; p. 679.

* Named by Doctors Cushing and Percival Bailey. “There was always the hope that some day he might find a way safely to remove that part of the brain where the [causative] cells originated.” Elizabeth H. Thomson, *Harvey Cushing*; Schuman, 1950; pp. 230-231.

dedicated worker. No one can fail to admire the idealism which once prompted him to say, "It is a poor teacher whose student does not surpass him."

In a cluster of Cushing vignettes† which appeared nine years ago, one of his former residents observed that "while his surgical technique was perfection of its kind, he lacked the speed and facility that characterized other leading neurosurgeons." A compensating factor was self-confidence derived from having "exploited every talent he possessed." Dr. Thomas I. Hoen‡ makes it clear that although there were quite a few who disliked Harvey Cushing, these few "admitted that no matter how heavy the task he set for his assistants, his own share of the load was always heavier." Dr. Hoen is stroboscopic:

I remember well the electric charge which seemed to fill the air whenever he entered the operating room and then the calm which would eventually come once he was at work. And then I remember the little swagger with which he would leave the operating room after a job well done. It was the swagger of a natural athlete, and I am sure that he walked off the baseball diamond in exactly the same jaunty fashion after he had made an exceptionally brilliant infield put-out for Yale.

Quick to anger, Cushing could even turn on a distinguished man like Gilbert Horrax whom he had brought to the Brigham; yet he would say, "If you have seen Gil operate, you won't want to see me." In his early days at

† *Bulletin of the New York Academy of Medicine*; November, 1954; p. 905. Cushing himself, let it be said, spoke of "the courage to work slowly and painstakingly."

‡ *Op. cit.* Dr. John E. Scarff, another vignettist, reports a Cushing axiom: "Every good doctor should be able to instruct the nurses to do their work. . . . He was one of the most skillful bedside nurses that I have ever seen. Dr. Cushing personally did every dressing on every single patient on whom he operated—whether the patient was from a private or a public ward."

the Hopkins, his arrogance and impatience§ got him into trouble on more than one occasion, and it was Dr. Osler his idol who finally reprimanded him. He could likewise be stubborn, as in trying to prove a theory which (his second biographer suggests) he should have abandoned. Yet that same tenacity was employed to develop a quite superior skill in drawing, highly important for illustrating post-operative notes—a talent which his own teachers had remarked when he was a medical student. Many of these notes were made before he removed his rubber gloves.

Dr. Cushing had a double university allegiance: Yale, his alma mater, to which he ultimately returned as a teacher; Harvard, where he took his M.D. (1895) and where he held the Moseley Professorship for twenty years to a day (1912-1932). Down at the Hopkins|| he had refused the chair of Surgery at Yale in 1907 because its Medical School had no available hospital with full-time beds for teaching and research. When the call came from Harvard, along with an invitation from the Brigham, offering him the chance to be Surgeon-in-Chief, he did not accept at once. Other Medical Schools besides Yale had been or were after him: Washington in St. Louis and Jefferson in Philadelphia, among them; also such hospitals as the Bellevue, the New York, and smaller ones elsewhere. He too was happy at the Hopkins; and

§ All in balance is that delightful incident on a morning when nothing went quite right. Cushing took it out on Gus—his gardener, houseman, chauffeur, and factotum—and Gus responded: "Doctor, you got egg on your chin."

|| In his sketch of Dr. Councilman, Cushing quotes him as saying: "Both at the [Johns Hopkins] University and at the Hospital there was that wonderful happiness in work." This was infectious, and among the carriers to the Brigham were the original three C's.

Dr. Fulton¶ documents the point that Cushing would not move without the fullest advance information. President Lowell wrote him three times between 29 March and 18 April 1910. To be a professor of surgery at the Medical School was all very well, but Dr. Cushing queried President Lowell on April 25: “. . . I do not expect this to be more than a confidential statement, but I shall, of course, wish to know whether the proposed professorship is presumed to indicate the head of the surgical department.” Osler had cabled on the twentieth: “DO ACCEPT HARVARD.” Dr. Fulton’s *Harvey Cushing* seems to suggest that the Moseley Professorship *was* the senior chair of surgery, though it had then existed but fourteen years. Dr. Edward D. Churchill refers to it in *To Work in the Vineyard of Surgery* (Harvard, 1958) but says “that it also became identified in the minds of many with the position of head of the surgical department at Harvard, which did not exist.” At any rate, at the age of forty-one H.C. received a university professorship. The then Moseley Professor (who apparently saw Cushing’s letter to Mr. Lowell!) was Dr. Maurice Richardson. He died in 1912 and H.C. succeeded him.

Dr. Christian, Physician-in-Chief, had been trained under Osler and “felt warmly disposed toward [Cushing]” as evidenced by a cordial letter which said in part:

My own cherished desires are realized in this opportunity for work at the Brigham & to have you on the other side of the pole is just as I wished. I think you will enjoy the life in Boston. I very certainly have.

Between them, in a long letter of 6 November 1911, ad-

¶ Fulton, *op. cit.*, pp. 338 ff.

dressed to President Alexander Cochrane of the Brigham Corporation, they outlined organization and staff requirements from dermatology to autopsies. The initial team of Brigham surgeons under Dr. Cushing included Drs. John Homans, David Cheever, and William C. Quinby.

But in spite of all the fuss and fuming to get started,** the first World War broke out and Dr. Cushing had still not really organized his clinic. Off to France, he spent three grueling years there dealing with traumatic neurosurgery and was himself ill before the War was over. War, however, didn't change his habits; and Dr. Hugh Cairns as late as 1926 said that "the battle of the Marne was nothing compared to the stress and strain of being Dr. Cushing's assistant." While Cushing was abroad, Dr. Cheever managed the surgical service with the assistance of Dr. Conrad Jacobson as Resident. Dr. Elliott C. Cutler—who was to succeed Dr. Cushing in 1932, both in the Moseley Professorship and as Surgeon-in-Chief at the Brigham—took Jacobson's place when the latter left the Hospital shortly after Dr. Cushing's return. In the years 1920-1932,†† says Dr. Fulton, Dr. Cushing "developed

** It was early in his Brigham career that Cushing firmly opposed (with an offer to resign) a plan for full-time teaching at the Medical School, with appropriate salary increases provided by \$1.5 million from the General Education Board of the Rockefeller Foundation which, in 1912, had given the Hopkins \$1 million for the same purpose. Cushing, strictly on principle, for he had other means, felt that he (and presumably others like him as contrasted with purely clinical men) should not be deprived of the money and incentive which private practice offered. His position was the stronger since he returned his fees in part for a Surgeon-in-Chief Fund to send men on his staff abroad or at least elsewhere for study. Harvard gave in; the \$1.5 million was refused, and a certain aloofness was established between the surgeon and the Harvard administration.

†† It was in 1932 that "some thirty-five enthusiastic young neurosurgeons and neurologists met at the Peter Bent Brigham to form . . . the Harvey Cushing Society." Thomson: *op. cit.*, p. 285.

the greatest neurosurgical clinic of our time, training innumerable men from this country and from every other part of the world." Ample testimony floating on the great sea of Cushing material‡‡ supports these words. Wherefore the names of Cushing and the Brigham are solidly joined, just as Cushing in his Ether Day Address of 1921 said that "Henry J. Bigelow and the Massachusetts General are names the medical world will couple for all time."

Dr. Cushing had done his internship at the MGH, where he observed several instances of brain tumor in which the operations were unsuccessful. Under Dr. W. S. Halsted at the Hopkins he was delayed in entering the highly specialized field in which he made his world-wide reputation. He was "scornful of the slow-moving ways of the Baltimoreans" after the pace of the MGH; but for all his stress on drive and stern routine, it should be remembered that Cushing deeply believed in the country-doctor relationship. Over all his active years he carried on an enormous correspondence with his own patients, many of whom returned from time to time to let him check their progress through post-operative years.

As a very young man, Harvey Cushing devised the so-called ether chart: a continuous reading of the patient's pulse rate and respiration by the anesthetist. Observation which he made in Italy of the Riva-Rocci blood-pressure

‡‡ By far the most engaging and subcutaneous study of Harvey Cushing is the sketch by his friend Lucien Price in *The Saturday Club 1920-1956*, edited by Edward W. Forbes and John H. Finley, Jr.; Houghton, 1958. Two excerpts are pertinent. "When Cushing began his operations on the brain, nine patients out of ten died; after he had practised thirty years, nine out of ten got well." And in the lighter vein: "I see again the skillful hands which had vanquished Death so often, and which, when he carved at table, laid back the slices of roast beef with an exactitude so unmistakably surgical that one eyed the portion on his own dinner plate with a positive sensation as of being a cannibal."

cuff led him to add blood-pressure record to that of p.&r. It was in 1910 that he developed the silver clip for vessels out of reach of the ligature. Almost from the beginning he was concerned with the pituitary gland; and until the publication (1912) of his technical monograph *The Pituitary body and its disorders* "there were few in the surgical world who had the courage to tackle the pituitary operation." §§ Even before he arrived in Boston, the book ||| was established as America's first great work on endocrinology, written by America's first great endocrinologist. In this monograph Cushing clearly identified the combination of flabby obesity, hypertension, and diabetes that later came to be known as "Cushing's Syndrome." Two generations of Brigham endocrinologists were to contribute to the study of this disease. Cushing himself thought that his Syndrome centered in the pituitary—"pituitary basophilism" was what he called it. His disciple, Dr. Sosman, concurred as a basis for treatment; but Drs. Thorn and Harrison (of the newer generation) thought otherwise, and have removed the adrenal glands, frequently bringing great relief to those afflicted. Half a century beyond the book, patients with Cushing's Syndrome are now developing pituitary tumors several years after adrenalectomy. As another Moseley Professor has put it, "It looks as though 'the Chief' was right after all—or at least partly right."

§§ Fulton, *op. cit.*, p. 320.

||| Now Cushing had his own theory on the disposition of lights and bushels; but in this instance he also faced a problem. Appointed to the Moseley Professorship, which he had not yet formally accepted, he identified himself in the book as "Moseley Professor of Surgery *Elect*," surely the first and last professor-elect at HMS. The publishers' (Lippincott's) problem was that they had never heard of PBBH, and duly entered it on the printed page as "Peter Bent Brigham Hospital, Boston, Mass."

When he was fifty-seven he first used high frequency current to remove a highly vascular tumor. This startling success at the Brigham "led him to send for all his patients with meningiomas—cases hitherto inoperable—and he began to remove one tumor after another."

It was characteristic of him to let nothing whatsoever alter the day's schedule, not even tragedy. One Saturday morning in April 1926, he operated on a woman with a spinal cord tumor; but as soon as the tumor was removed, he asked his young and startled Resident ¶¶ to close the wound, including the closure of the dura. It was not until later that the young surgeon learned that Dr. Cushing's elder boy had been killed that morning in an automobile accident. With this in mind, any reader of Cushing's *Life of Osler* will better understand the quality of heart and head controlling his description of the death of Sir William's son in France in 1917 and the effect of that death on the father. H.C. saw the young soldier just before he died; but with a surgeon's absolute restraint he does not for one moment invade the story as individual or friend. Only in great books that touch great character does one feel this rise and fall of tide.

Another Brigham student already mentioned—Dr. Percival Bailey—left the hospital in 1921 as Arthur Tracy Cabot Fellow, and after a year abroad returned to begin a histological study of Cushing's brain tumor material. He remained with his Surgeon-in-Chief for ten years. He recalls that Cushing "was not an easy man to work with. . . . When the tension became too great, I went away for a while. But I always came back. My debt to him was incalculable." But sometimes it was the patient himself who

¶¶ Dr. Leo M. Davidoff.

entered voluntarily into long association, returning at intervals when (for example) recurring medulloblastomas meant death or operation. Miss Thomson*** cites Milton Ferguson on whom Dr. Cushing operated five times in all—the first, when his patient was but eight years old. When Dr. Cushing died, Ferguson wrote:

I looked forward every year to April 11 to make my report to him on my condition and always got a prompt and cheery reply. It is like losing a very dear friend, as you must realize that a blind person has few friends to whom he can go for advice when in trouble.

The Life of Sir William Osler—published in 1925 in two volumes: more than 1,400 pages, which took four years to write—would in itself have made the reputation of any author. It won a Pulitzer Prize and remains the classic in its field. It was written under great pressure, apparently with endless revision and cutting; for unlike his drawing, writing never came easily to this surgeon-biographer. But the noble concluding words are justly famous. Bliss Perry once quoted Harvey Cushing as saying that “he thought many of the best passages [of the Osler] had leaped into his mind after he had dressed for an operation.”

§ 10

OTHER giants of the Christian-Cushing era and on through the forties deserve far more attention than space permits. The Bostonian John Homans, Harvard M.D. '03 and fourth of his line in medicine (his son has made

*** *Op. cit.*; pp. 254-255.

it five), interned at the MGH and became assistant to Dr. Maurice H. Richardson, at that time the most prominent surgeon in the city. In 1908 Richardson sent young Homans to Baltimore to work for a year with Cushing in the Hunterian Laboratory. Cushing in turn brought him here to the Brigham to serve under him, with David Cheever, as assistant in teaching and patient-care in the general surgical wards. It was doubtless Cushing who further arranged that he should work for a year with Professor Starling in London. As a result, Homans's papers on the pancreas (1913, 1914, 1915) suggest that had he carried his research a little further he might have discovered insulin ahead of Banting and Best. At the Brigham he became one of the founders of the American school of vascular surgery, and some 45 of his 100 published monographs deal with specific problems of vascular disease of the extremities. Dr. Richard Warren has observed that "it had been hard for Homans to wrench himself away from the tradition of his father and Dr. Richardson and pursue a so-called academic life and thus limit his private practice." That he succeeded is a further tribute to Brigham influence—the hospital which he served until his retirement in 1946—and to HMS where he was Clinical Professor of Surgery.

"Impatient with statistics, John Homans preferred to gather a few patients around an idea. Furthermore, he loved nothing better than a good professional squabble."* He was a colorful figure—a quick temper and strong language flavored his operations—but he was also beloved. Once, when he was leaving Rochester, Dr. William Mayo

* Osler once observed that "the quarrels of doctors make a pretty chapter in the history of medicine."

said to him: "We dislike to see you leave, John; we were just getting used to you." Like his father before him, he enjoyed the affectionate nickname of "Uncle John," and was far more concerned with what the students said of him than with the praise of his equals. Dr. Warren says that "the latter's disapproval he sometimes seemed to welcome."

Dr. Homans was, as he said of Sir James Paget, "a luminous writer"; proud in particular of his highly respected and widely read *Textbook of Surgery*. A classic from the day of publication, it had a fine send-off, for when Harvey Cushing reviewed it, he alluded to "the Irishism that Osler's *Medicine* was the best existent work in surgery" and said that "Now we have a work on surgery which the physician can not well be without." But the author, as time passed, noted with sadness that no young surgeon came forward to revise the volume and bring it up to date. It couldn't be done: it was much too much the author's child, for anyone who loved both Jane Austen and *Moby Dick* would surely be original in voice.† When he was dying, Dr. Homans expressed regret that he had not used morphine frequently enough in his practice and that he would not be able to see his own autopsy. The exemplary minute of 1955, prepared by six of his distinguished colleagues,‡ filled four pages of the *Harvard University Gazette*, one of the longest and truly affectionate obituaries in that journal's history. Briefer in eloquence is one sentence in a letter to Cushing from Dr. W. S. Halsted,

† Example: "Now pain in the left lower abdominal quadrant is, so far as I know, the most baffling symptom known to surgery and occurs as a rule in females of almost unparalleled dreariness."

‡ None of whom caught the error in Jane *Austen*, even though their urologist colleague, Dr. George J. Austen, is hewn correctly to the line.

who coined the phrase "The M.G.H., born aristocrat" and who had early argued against H.C.'s concentration in neurosurgery:

I loved John Homans, as every one did.

Like Dr. Homans, David Cheever, M.D. '01 (HMS), was also fourth in line in medicine, with a microbiologist-teacher son to make it five. His medical heritage goes back to great-grandfather Abijah, Class of 1779 Harvard College, who received his professional training from the Hersey Professor John Warren. David Cheever, Associate Professor of Surgery (HMS) when he retired in 1939, was a great teacher of anatomy; but I remember him personally as a great gentleman in the absolute sense of that sometimes amorphous word. If ever anyone observed the code of *noblesse oblige*, it was surely he.

In his middle sixties he acted as Surgeon-in-Chief while Dr. Elliott Cutler was overseas—he himself having served as Lieutenant-Colonel in World War I.

It is for us to . . . give an accounting of our stewardship during this period [wrote Dr. Cheever, 31 December 1942] briefly and without complaint, with our thoughts sympathetically embracing the millions of human beings who have been plunged into grief, sorrow, and unspeakable suffering by the maniacal folly of a few monsters in human form.

It was Dr. Cheever, on 28 January 1913, who operated on the first Brigham patient. The operation was for varicose veins; the patient, one Mary Agnes Turner of Roxbury, then at *her* half-century mark. Dr. Cushing made the incision, Dr. Homans was among those present, and Dr. Walter Boothby (see section 15) administered the anesthetic.

Second of the Brigham's distinguished trio of Surgeons-in-Chief (1932-1947) was Elliott Carr Cutler, who received his M.D. from the HMS just in time—after five months at Heidelberg—to intern at the hospital where he would later succeed Dr. Cushing, and succeed him also in that chair in HMS across the street. He served overseas with the famous Base Hospital No. 5;§ and after apprenticing in surgery at PBBH until 1924, became Professor of Surgery at Western Reserve in Cleveland, remaining there until his recall to Boston in 1932.

Dr. Cutler, a tall, fine-looking former crew captain, tireless still in work|| and play, was dedicated to the advancement of his Hospital. Dr. Walter speaks of the degree of responsibility which his Chief put on young people. He would tolerate no puppets, but set about getting the young clinician *into* the job to do a scientific project *on his own*. One learned under Cutler how to *define* a problem. But above all, the Chief was interested in men rather than in science, and his students were never allowed to forget the priceless privilege of working on man.

In World War II Dr. Cutler served overseas (a Brigadier General, like his brother Robert) and was decorated by Robert P. Patterson, Secretary of War.¶ In his lifetime he was also honored by Great Britain, France, and Norway. When he died, 16 August 1947, Dr. William C. Quinby wrote of him—of “his almost incredible courage . . . which never admitted surrender.”

§ See section 11. Dr. Cutler also served his University all his life: Overseer, Chief Marshal of his Class of 1909, President of both the Harvard Alumni Association and the Associated Harvard Clubs.

|| Besides the first mitral valve operation on the heart, Dr. Cutler performed the first total thyroidectomy.

¶ An Oak Leaf Cluster to his D.S.M.

Throughout the [last] months, which must often have seemed to him interminable, he persisted in keeping in intimate supervisory contact with the hospital, the interns, and the surgical teaching of students.

* * *

Second of the Brigham's distinguished trio of Physicians-in-Chief (1939-1942) was Dr. Soma Weiss, Hungarian by birth: a young, brilliant, and dynamic leader, whose telling strength was halfway into legend long before he died. Few in the Boston world of medicine have so quickly made so large a place for themselves. Warm and likable, Dr. Weiss quite perfectly combined the qualities of investigator, executive, teacher, and humanitarian. He worked easily and swiftly, but always with a thoroughness which left no cobwebbed corners, no problem areas unpatrolled. In those two and one-half years as Chief, he published more than thirty articles—and nearly 200 in his brief professional life. "Dominant in his work was the concept of a mechanism to be proved or disproved." He carried a little black notebook with him as others carry a watch or wallet. "Clinical research," wrote one of his many disciples, "is not a monastic privilege, but depends for its survival on its practical benefits to the practice and teaching of medicine and to mankind in general."

Referring to Dr. Weiss's fourteen years at the Thorndike Memorial Laboratory in the Boston City Hospital, Dr. Francis M. Rackemann** calls him a pharmacologist; and there is little doubt that having "Dr. Weiss to talk to about many problems" was a factor in Dr. George

** *The Inquisitive Physician: The Life and Times of George Richards Minot, M.D.*, Harvard, 1956; p. 170.

Minot's fruitful study of pernicious anemia. Indeed, when in 1938 the appointment of Weiss as Professor of Medicine at HMS as of 1 September 1939 was confirmed, Dr. Minot wrote to his friend Dr. Gustav Nylin in Sweden (much as Charles W. Eliot had written twenty-eight years before to Dr. Christian): "He is to take Dr. Christian's place at the Brigham Hospital, and we are thus assured that that clinic will develop in splendid fashion."

NOTE ON A NOBEL PRIZE

The Nobel Prize in Physiology and Medicine for 1934 was shared jointly by Dr. George Richards Minot (1885-1950), Dr. William P. Murphy, and Dr. George H. Whipple. The radiogram from the Caroline Institute, Stockholm, said that the award was made JOINTLY FOR THEIR DISCOVERIES [note the plural] CONCERNING LIVER THERAPY AGAINST ANÆMIAS [note the diphthong]. Dr. Whipple, a Yale man with a Johns Hopkins M.D. ('05) had been Dean and Professor of Pathology at the School of Medicine and Dentistry, University of Rochester, since 1921. Dr. Minot, three times a Harvard man ('08, M.D. '12, S.D. Hon. '28), was Associate in Medicine PBBH, 1923-1928, and thereafter Consultant Physician to the Hospital. His life's work was in the study of blood and dietary histories. Dr. Murphy, a graduate in 1914 of the University of Oregon, had taken his M.D. (HMS) in 1920, interned in Providence, and was on the Brigham staff from 1922 to 1958, as Senior Associate in Medicine, and a specialist in hematology.

Now everybody knows that insulin is a specific for diabetes, and liver extract the equivalent for pernicious anemia, but not everybody realizes that the discovery of

one treatment would surely have been delayed but for the timely discovery of the other. From 1921 on—he had not yet turned thirty-six—Dr. Minot was a diabetic. “Dr. [Elliott P.] Joslin’s figures,” says Dr. Minot’s biographer, “showed clearly that diabetes coming on with that severity at that age would have been fatal in a relatively few years.” But on 12 January 1922 (in the very nick of time) insulin was available to Dr. Minot; and although they did not know it in Toronto, Drs. Frederick G. Banting and Charles H. Best (then a medical student) became in fact the Nobel Laureates who prospered another Nobel trio against the year 1934.

Of Dr. Minot it has been noted that he “had a genius for appraising . . . scientific ability as well as . . . personal character.” For him—to paraphrase his own words—the patient was always the whole person. Of Dr. Murphy, with whom he had received the Cameron Prize from the University of Edinburgh in 1931, Dr. Minot once reported to Dr. Rackemann: “First, though, I must say how lucky we are to have Bill Murphy [at the Brigham]. He is a terrific worker.” When Dr. Minot received the Kober Medal in 1929 Dr. George M. Kober, in presenting it, told the audience that Dr. Minot’s “brilliant work in pernicious anemia was not a matter of chance or good luck,†† but must be attributed to scholarly researches in diseases of the blood.”

†† A sharp example of Dr. Minot’s absorption in the details of a patient’s normal diet, and his exhaustive method of demonstrating at the bedside exactly how one arrives at the truth: “Do you have meat?” “Yes, Doctor.” “Do you eat meat?” “No, Doctor.” “Gentlemen, you see now why it is that I have to be so fussy about words. It is very easy to be caught off guard.”

§ II

TO meet Miss Carrie M. Hall, R.N. *Emerita*, now in her ninetieth year, is a special privilege. You will find her exactly like the best of all her characterizations: "She is a sort of Bernard Baruch of nursing without benefit of park bench."* To talk with her five minutes is to learn without being told that this self-discipline and dignity comes straight down from seventeenth-century Puritan and Pilgrim stock. Clear and precise in speech, with a total recall for detail, she is history for the asking. Now and then, as she pauses to search for a word, you look at her, remembering what Sir William Osler said of all nurses everywhere: "You have been much by the dark river—so near to us all—and have seen so many embark."† You sense the inexorable will, you hear the short clipped speech the tone of which, I dare say, many a nurse at times most mortally feared. Yet she is proudly reasoned and reasonable, as Florence Nightingale at times was not; alert and trim as the simple cap of the Brigham nurses—the folded handkerchief which she herself designed. Still immaculate in dress, composed in manner, she speaks—but somehow you forget it—from her own dark world of blindness. Of television, for example, she remarked, "I can't see the pictures but I can hear the dribble."

Miss Hall came from Nashua, attended Nashua High School for three years, and then went away to a private school for one. In 1904 she was graduated from the MGH training school for nurses, spent five years as superintend-

* Joseph E. Garland, *Boston Herald*, 4 March 1956.

† *Aequanimitas*, p. 20.

ent of the Margaret Pillsbury Hospital in Concord, New Hampshire, and came to the Brigham to organize and head its Nursing School in 1912. From the first, she insisted that all nursing students be graduates of a high school.‡ It is hard today to equate the forty-hour week with the stern demands of 1912 which Miss Hall has described:

The hours of work for graduate nurses vary with the kinds of employment. They are longest in the private duty field. A twelve-hour day for seven days of the week is not uncommon. Nurses continue to give a good deal of the so-called twenty-four-hour duty service. With such hours it is not surprising that many women are forced into early retirement. . . . But the satisfaction which comes from the ability to relieve suffering, from contacts with persons in all grades of society, in an understanding of their lives and problems, makes the work full of interest and altogether worth while.

“Strict but fair” is how one of Miss Hall’s former nurses describes her. Once a month Miss Hall would inspect the wards herself, and the uninitiated were eloquently warned (though not by her) to dust the chair rungs and the tops of clothes covers. Once, when my informant had left her wrist watch on the wash stand, she went to Miss Hall who said: “You left a valuable watch where the maid would find it, and you put temptation in her way—which is why I am scolding you. In spite of that she returned the watch and here it is.” Just to tell that story, even in paraphrase, is to indict a world where strictness lacks such undertone of principle.

Since the same woman “who designed nurses’ uniforms

‡ It greatly annoyed her to hear anyone speak of a “trained nurse.” The proper title was (and still is) “a graduate registered nurse.” She speaks of Linda Richards as America’s first R.N.

had charge of filling them," Miss Hall was fully occupied before the Brigham opened its first door. In the months preceding the entrance of the United States into World War I, she organized for the Governor's Public Safety Committee an unofficial corps of civilian nurses around the state which he could tap in case of emergency. This corps later became a part of civil defense. And when the now famous Base Hospital Number Five sailed for France in 1917, it was Miss Hall who organized its nursing unit. Her service overseas was filled with distinction: Supervisor of Nursing for all of the American Red Cross nurses in England; Chief of the American Red Cross Nursing Force in France. On 28 December 1917 the Boston Evening *Transcript* announced:

Five Boston nurses and several nurses connected with the medical corps of the Harvard unit in France have won a special commendation from Field Marshal Haig for bravery in the line of duty. The nurses are Miss Carrie M. Hall and Gertrude M. Gerard (anesthetist), members of the Peter Bent Brigham Hospital.

This was but an earnest of many honors§ which Miss Hall won in the field. Today her medals are on view in the Nurses' new Residence. Perhaps not many observed or were thrilled in 1917 that the signer of Field Marshal Haig's commendation was Winston S. Churchill.

Of her years in France and England, Miss Hall preserved a scrapbook; and among the still unfaded photo-

§ Including Britain's Royal Red Cross Medal, first class, with citation; Medaille de la Reconnaissance Français, second class; Edith Cavell Medal from the Belgian Government; the Florence Nightingale Medal, 1929. Three other Brigham nurses of the eight who accompanied Miss Hall as American Red Cross nurses received Britain's Royal Red Cross Medal: Helen Ebbs (Jeffries), Gertrude Gerrard, and Louise McCloskey (Lapan).

graphs|| are several extraordinary letters and copies of letters. One or two touch on the long feud between her and Harvey Cushing: a feud albeit marked by mutual respect. Crossing the ocean, says Miss Hall, "Dr. Cushing never spoke to me directly. If he wanted something, he would send Elliott Cutler to me. I got along all right with *him*." Something in France provoked a crisis which drove her to the written word. On 2 May 1917, she wrote:

My dear Dr. Cushing: It is useless to try to evade the feeling of unpleasantness that exists between you and me. . . . I cannot see my way clear to resigning [as Chief Nurse] except at your written request or at the request of the Red Cross. [Needless to say, Miss Hall did not resign.]

Today there is a quiet kind of triumph in her little peroration: that after she received these various honors, Dr. Cushing was openly proud that she belonged to his unit. Henceforth, says Miss Hall, their quarrels were largely at an end.

Her strong and constant friendship for Dr. Hubert B. Howard,¶ first Superintendent of the Brigham, is reflected in the ease and naturalness of some of his home-front letters. "Rugged individualist, rough diamond," as she describes him, he could write straight off the cuff:

It seems to me that (if this war should stop within a year or two) if you came back here and took charge of this Training School

|| A fancy enlargement of the Casino in Boulogne during occupancy by Base Hospital Number Five bears her brief notation: "Behind the 'bar' may be found bed pans, dressing basins, and many other things not found there in happier days."

¶ A classmate at Harvard College (1881) of William Roscoe Thayer and one year ahead of Theodore Roosevelt. He was invited to head the Brigham as early as 1902. He went to New York to consult Miss Hall (at Columbia) about coming to the Hospital. It was then that she insisted on calling it a *School of Nursing*.

for another year or two, even if you did not do it for any longer, you would graft onto it a good deal from your experience abroad and you would build up quite a monument to yourself. This has been your baby from the first.

Miss Hall resumed her duties as Superintendent of Nurses 1 September 1919, having been on leave for war service since May 1917.

“Her baby” was the word for it. “Miss Hall, you decide what you want and make me want it too.” These words from Dr. Howard had determined that good sense, economy, and thorough inspection would control the purchase of the Brigham’s original equipment. She herself reviewed the blueprints of the Hospital and made a number of suggestions which were later incorporated into the building. Not long after, Dr. Howard and certain other future staff members went abroad to study European hospitals; but early in April of 1912 Miss Hall was formally appointed to her post, and during the Easter vacation was sent by Dr. Howard to see Dr. Cushing in Baltimore. By July she was on the payroll, living with her brother in Quincy, and commuting to Huntington Avenue by train. She began her work in what later became the Outpatient Department, and for a time was Dr. Howard’s assistant. Dr. Howard used to say: “If it’s good for the patient, it is a good thing to do, and a way should be found to do it.” Miss Hall remembers that during those weeks of purchasing equipment, she examined the quality of *fifteen* different kinds of mattresses, felt and hair.

She will tell you that the School of Nursing formally started in the Superintendent’s residence at 26 Shattuck Street. It provided a good living room, an office, and five bedrooms on the second floor. The third floor then di-

vided into a billiard room, two maids' rooms, and one bath. The bath was welcome and retained, but the billiard room dissolved into a dormitory and classroom for the nurses. Miss Hall standardized all nurses', doctors', and employees' quarters as well as the wards themselves. She also purchased for the Hospital all of its original china and silverware.

In the beginning, one nurse taught the sciences and another practical nursing. All nurses were further instructed at the Harvard Medical School. On 19 March 1913, they moved into their own building, "with its comfortable single rooms, its splendid bathing facilities."

Of those eight Brigham nurses alluded to in the War footnote on page 54—Nurses May Grant-Coakley, Alice Downey (Walsh), Helen Ebbs (Jeffries), Gertrude Gerard, Margaret Leavitt, Louise McCloskey (Lappan), *Margaret Moulton*,** and Elizabeth Walsh (Schurig)—Mrs. Lappan is Administrative Assistant in the Nursing Office and Miss Grant-Coakley is returning from Ireland for the Hospital's Fiftieth Celebration.

§ 12

MISS Hall was the first to recognize the Nurses School as an educational project. In the early days she hired—she will tell you frankly—"most any nurse I could get." But under the guidance and control of so strong a head and hand, whatever the factor of attrition, the Brigham Nursing School produced from the beginning young graduates whose cap stood for quality. "Dear Westerna,"

** Deceased.

wrote Dr. Osler to an emerging Nightingale at a western hospital, who had inquired of him what special virtues were needed in the nursing profession—

Dear Westerna: No special virtues are needed, but the circumstances demand the exercise of them in a special way. There are seven, the mystic seven, your lamps to lighten at . . . tact, tidiness, taciturnity,* sympathy, gentleness, cheerfulness, all linked together by charity. . . . It is one of the greatest of human blessings that so many women are so full of tact.

Miss Hall had met Sir William at the Brigham's informal opening, and during the War she spent a couple of week-ends with the Oslers in Oxford. His nursing code was much as hers. For example, "Neatness is the asepsis of clothes—not the carelessly tied shoe-string or the dorsal infirmity of a waist and skirt too illy joined." Writing on shipboard on his way to Baltimore and thence to the Brigham inspection, he said that "London should be the most important medical center in the world. That it is not this, is due to lack of organization and cohesion." At the Brigham there was both organization and cohesion, and Sir William was not sparing in his praise.

"The nursing division of this hospital," said Dr. Moore quite recently, upholding the tradition, "comprises two special objectives: education and service." After Miss Hall retired in 1937, emphasis alternated between education and service, and the quality of Brigham nursing suffered accordingly. Today the curve is clearly upward.

I say then [Cardinal Newman being the sayer] that the personal influence of the teacher is able in some sort to dispense with an academical system, but that system cannot in any way

* Of taciturnity, Sir William said, "If you have heard anything, let it die with you." Which is not far from Psalms 39, 1: "Let your mouth be a bridle."

dispense with personal influence. With influence there is life, without it there is none.

With Miss Hall on the side of both life and influence, undiminished right down to her retirement, it is doubtful if any other nurses' training program in America excelled the Brigham's for discipline, efficiency, and inherent quality.† One former intern, long since a distinguished surgeon, remembers a day when he altered in handwriting the prescribed treatment for a patient. Just after assuming this spontaneous responsibility, he ran into his Chief with Miss Hall and the patient's nurse cruising down the Pike. In his excitement to explain what he had done, he put his hand on the nurse's shoulder. "Do you have to touch her to talk to her?" asked Miss Hall in a voice of about 4° C. "Young man, as long as you are here, don't you ever touch one of my nurses again!"

The School was established without benefit of today's minimal standard of good living. Not until 1920 did electric lights replace gas lights in the students' quarters. Miss Hall complained of congestion, lack of reception and recreation space for "fifty girls with modern ideas of life and work and recreation." By 1927 things were somewhat better; the young nurses had for their own use a practice room, two science laboratories, dietetic laboratory, and a reference library. The simple, attractive uniform has undergone various utility changes, none of them entirely in the direction of Dior. The pin of gold with

† "The high standards of [nurses'] training and education continued to attract a high grade of students, and within ten years after the founding of the School its graduates were in great demand and were to be found over wide-spread areas as well as on their own hospital staff." Frances Stansfield LaMontagne, Director of Nurses, Quincy Hospital: Manuscript history of nursing at the Brigham, 1940.

blue background and gold chalice and caduceus was designed by Tiffany.

Somewhere in the twenties the Trustees created an Advisory Committee "to aid in stabilizing nursing education and continuity of nursing service."

[In 1940, says Mrs. LaMontagne] attempt is made to correlate clinical experience with theoretical teaching. Following a four months' preliminary period and the acceptance of the student into the School, she will study (months in parenthesis): Medical Nursing (7), Diet Kitchen (1), Surgical Nursing (7), Operating Room (2), Outpatient Clinic (2), Pediatric Nursing (3), Obstetric Nursing (3), Private Patient Nursing (2): a total of 27 months.

Miss Margarita M. Farrington, R.N., young and active Director today of Nursing Service and the School of Nursing, will tell you that between 1923 and 1937 a five-year affiliation program with Simmons College offered the aspirant a diploma from the Brigham School of Nursing, a certificate in Public Health Nursing, as well as the Bachelor's degree from Simmons. In all, thirty-four young ladies took advantage of this dual program. Long before that (4 January 1915) there was a year's trial relationship with the Children's Hospital; and following that (1917) another with the New York Nursery and Child's Hospital. The Massachusetts Eye and Ear Infirmary joined with the Brigham Nursing School in 1924 in a special two-months' training program. This relationship, however, was discontinued in 1932 for lack of money.‡ From time to time, other similar relationships were tried with other hospitals.

‡ But twelve scholarships were established by the Corporation in 1920, and this important student aid has grown so that today nursing scholarships run as high as twenty-six.

Fifteen nurses in the first class were graduated on 17 December 1915. Last June the number of nurses capped was forty-three, and in August 1963 the number to be graduated will be fifty-two. As of now, there are 1,650 graduate nurses of the Brigham listed on the records, of whom 1,550 are living. Student nurses today have their rooms in the Huntington Residence—the old Brigham Hotel just across the avenue, completely renovated for their use. It accommodates one hundred and twenty-six. Current objectives of the School of Nursing are still based upon the tenets established by its first Director—to promote an educational program of high quality that will produce a practitioner of high-quality nursing. During the first year, students obtain their basic science preparation at Northeastern University. Concurrently, and throughout the remainder of the program, their preparation is under the direction of a well-qualified, competent School of Nursing faculty. Furthermore, all students affiliate for three months at the Children's Hospital, three months at the Boston Lying-In, and three at the Massachusetts Mental Health Center. Throughout the entire nursing program clinical experience and theory are closely correlated to enhance the learner's preparation. Rigid standards of the School's program continue to attract a high caliber of student today as in the past. Because of space and other limitations, applications greatly exceed the number of students that can be accepted. The class for September 1963 (already selected) stands at sixty-five, and twice that number of qualified candidates were turned away.

Nursing Service demands are now greater and more complex than ever before, and great care is required in

the selection and assignment of nursing personnel to meet patient needs. The Nursing Service is responsible for providing staff for all pavilions, clinical, and research areas. The staff consists of graduate registered nurses, licensed practical nurses, and nursing aides who perform their duties under the close supervision of the professional nurse. Private duty nurses further supplement the staff in the care of the critically ill patient; and some part-time graduate nurses (mostly married women) are available for duty to assist where needed. These are popularly known as "floats." As for geographical distribution: in addition to those from the immediate area, the staff includes graduate nurses from Australia, Canada, England, Israel, the Philippines, Holland, Lebanon—all of whom are here to receive special training.

A large proportion of Brigham Nurses have made names for themselves—in military duty, in missionary work, as the heads of university nursing programs, and of other hospital nursing services and diploma schools of nursing across the land. Some fifty per cent return to work in their own hospital following graduation. Many are married, with three or four children; and at the moment three daughters of School of Nursing alumnae are students in the School.

Miss Farrington, a 1940 graduate of PBBH School of Nursing (under Miss Hall's immediate successor Lucy H. Beal), received her B.S. in Nursing Education from Boston University, M.A. in Nursing Administration from Catholic University of America. Prior to returning to PBBH Miss Farrington had held supervisory positions in the Veterans Administration Hospitals in Framingham and Boston, completed six years as general medical and

surgical nursing specialist at the Veterans Administration Central Office in Washington, and (most recently) Chief of the Nursing Service at the VAH, Boston. During World War II she served three years in the Army Nurse Corps with the rank of Captain. Her immediate associates at the Hospital are: Mrs. Katherine Murphy, Associate Director, Nursing Science, and Miss Virginia Francis, Associate Director, School of Nursing. Mrs. Murphy is a former Brigham nurse and has been with the Hospital for twenty years.

§ 13

PATHOLOGIST-IN-CHIEF Dr. Gustave J. Dammin is a tall and powerful-looking man, just past fifty, with a wide background in his profession: Cornell, Johns Hopkins Hospital, Columbia, Washington University in St. Louis; Colonel in the Medical Corps, U.S.A., and Consultant in Pathology, Office of the Surgeon General; an authority on parasitic and tropical diseases. His vision, like his complex laboratory, reflects the total hospital. One consuming interest at the Brigham today is the study of diseases of the kidney respecting solution of problems involved in transplantation—a study in which Dr. Dammin and his staff will play a vital part.

The opening of his 1962 report quotes as the guiding words of his department what Dr. Councilman, first Pathologist-in-Chief, said in weighing the balance for pathology on the Brigham's first birthday:

What we know of disease is due mainly to the study of the causes, their mode of action, and effects produced, as illustrated

in the examination of the body after death. Such study has never been of more importance than at the present time, for the past experience and new methods of investigation, chemical, microscopical and bacteriological, are enabling us to go further in research.*

Now pathology, we note in passing, was a subject in which Harvey Cushing received one hundred at the Medical School—the first time the mark had ever been given. At the Brigham, he and Dr. Christian were strong for post-mortems. “We learn that we may teach,” says Dr. Dammin; and this theme (like his inescapable humanity) echoes through all of his reports over the ten years since he came here and to the HMS. “The problems we face at the Brigham from day to day are those we enjoy encountering. . . . Recognition of abnormal structure as evidence of a disease process is not the *last* step of the pathologist in his study of disease, but the *first*; and today he uses histochemistry, fluorescence, microscopy, electronmicroscopy† with tagged substances, among other approaches that increase his knowledge of the pathogenesis of a lesion. A hospital like this,” continues Dr. Dammin, “has a special mission—research in a variety of disciplines.” Even within his own area he sees hope for a variety of pathology departments. One senses from the way that Dr. Dammin speaks of “exciting work on the synthetic polypeptides as models of protein antigens” or of the study of vascular patterns of the heart, lungs, and kidneys,

* Somewhat at variance with remarks of the often caustic Florence Nightingale. To her, pathology was the negative of health. “Pathology teaches the harm that disease has done. But it teaches nothing more.”

† Now on the Brigham working agenda is an electron microscope with appropriate laboratory of two rooms: one containing the microscope and a dark room, the other a tissue-processing unit. The electron microscope is one product of group effort which qualifies so much research today.

or the pathogenesis of Schistosomiasis‡ that his laboratory might well proliferate from week to week, let alone from year to year. The Chief would remind his visitor that frontiers which opened in World War II in medicine have widened farther: witness the many branches of government medicine which now actively concern pathologists at all points of the compass. But of course autopsy remains an important function of pathology. The 1961 report describes a study of 553 consecutive autopsies for evidence of bacterial and mycotic infection.

One may wonder if the large turnover of research trainees, resident members of the staff, and visiting foreign doctors mitigate against the completion of individual pathological projects in so large and diverging a department. When a canine splenic homograft is achieved, do the achievers themselves stay on at the Brigham long enough personally to evaluate the results? Apparently so, though the residents rotate on a schedule of three to six months a year for each man between the Brigham and other Harvard affiliated hospitals. But it is oftener true than not that man B or G or X will pursue what man A begins. Another pathologist, Dr. William Boyd§—a non-Brighamite—concludes that “the history of medicine is like the history of the world. It is the story of but a few people. Few men can leave their footprints in the sands

‡ Infection of the intestines, liver, and lungs by a microscopic worm: the disease recognized at least 110 years ago. It falls under Helminthology, and the worm involves as host both man and a snail. To an alarming extent, Puerto Rico and Venezuela have the disease at present. New York already has the problem: not long ago a secretary on a cruise trip swam in Puerto Rico waters, returned home, and came down with abdominal pains and enlargement of the liver. The Brigham so far has seen but one or two cases. After the lapse of a hundred years, what would Florence Nightingale say of the present concerns of pathology?

§ *Medical World News*, 21 December 1962; p. 46.

of time; and if they would do so, they must wear their walking shoes." Dr. Dammin is clearly one of these few people. I followed him through his laboratories over in the Medical School and marveled, as a layman, that this impressive alembic in limbo can distill the truth or near-truth or confirm an error in so many areas day in, day out.

The training which the pathologist must get and the talents in which he must excel [in the words of Dr. Dammin] are those which identify him as distinctive in the field of medicine. He must learn normal and abnormal structure, and the closely related chemical, immunological and other aspects, of disease processes. It is the pathologist's responsibility to identify and define disease processes. Fortunately, we can add to our histochemistry laboratory [this] electromicroscopy laboratory which will be a tremendous stimulation in this direction. . . . Disease in man cannot be studied in one Department only, and because of this we are grateful to the other Departments who help us to make our studies more definitive and meaningful.

§ 14

SCARCELY a word in the hospital lexicon today is more familiar or more vivid or perhaps more frightening to the average layman than the simple term *x-ray*. For *x-ray* signifies an unknown value in bad news, disaster, and clean bill-of-health, with a quaver in the question mark until the film is developed and read by the radiologist. In other words, *x-ray* is what you get when you crack a rib, break a leg, suffer an abscessed tooth, or discover—as I trust you will not, though Kipling did—that “something’s gone adrift inside.” The bigger mouthful, *Roentgen ray* (the original name *x* years ago, after the

German physicist-discoverer) still pops up in the radiologist's laboratory; but it early needed simplifying, as did the originals of glads, cukes, spuds, and mums. At the moment, however, generic *radiology* has not only taken over and absorbed the technique of x-rays, but has proliferated into radiobiology, neuro-radiology, cinefluorographic matters, linear accelerators, atomic medicine, therapy, and the like or even unlike.

Our efforts have turned to an examination of the combination of radiation and 5-bromo-deoxyuridine. The radiosensitizing effect of halogenated thymidine analogues, when incorporated into the DNA of bacterial cells, is recognized.

Of course it is; but not by the average layman, and not by me. The man who can handle such alpha-gamma language is Dr. James B. Dealy, Jr., Radiologist-in-Chief at the Brigham since 1956. But catch him working on a lower voltage and one sees that, like his brilliant and deeply respected predecessor-in-chief, Dr. Sosman, he has a natural gift for lucent prose. Lucent, incidentally, is his own root word: "The full and *lucent* career of Merrill Clary Sosman, M.D."

Let us look at Dr. Sosman, whom Dr. Burwell called "a virtuoso in reading x-ray plates."* In 1921, as Army Roentgenologist at the Walter Reid Hospital, he was assigned for nine weeks' additional training at the MGH "under the late, great Dr. George W. Holmes," when Dr. Cushing corralled him for the Brigham. "A gregarious scholar and a gregarious man," wrote Dr. Dealy in March 1959 when Dr. Sosman died, "it will not be easy for those who came in contact with him to decide why [he] left

* It would be film today.

an indelible imprint on their lives. To the student in the reaches of the amphitheater, he will perhaps be remembered as the teacher with a crisp message, a better than average aim with chalk, and an improbable but never-to-be-forgotten illustrative story.”†

Dr. Merrill Sosman's chief contribution was the establishment of a strong clinical department during the growth period of a specialty that needed strength such as his to help establish it as an accepted therapeutic weapon on the one hand and as one of the most important diagnostic tools in medicine on the other. His interest became channelled by the interests of the clinicians with whom he worked in close collaboration. Notable among his achievements were 1) Assessment of the role of x-ray therapy in diseases and tumors of the pituitary gland‡—one of Harvey Cushing's prime areas of interest and 2) the detection of calcification§ within the living heart—the area of interest of Henry Christian and Samuel A. Levine. This latter accomplishment did not come with the aid of elaborate or specialized equipment; rather it exemplified knowing what to look for and where to look for it with conventional apparatus. Knowing what to look for, in turn, represented the fruits of a continuous exchange of clinical information between the physicians and surgeons and the radiologist.

The activities of the department at present consist of an extension of this approach, with a continuing channelling of activities along the lines of the contemporary interests of the staff.

† See section 19a. Dr. Dealy gave me a story *about* his predecessor. After Dr. Cushing had retired from the Brigham and gone to Yale, an x-ray of his stomach revealed a gastric ulcer. It was not ruled out that it might be malignant, but Dr. Cushing would permit no operation until Dr. Sosman read the plate. Dr. Sosman pronounced the ulcer benign and said that a couple of weeks of diet and rest would reduce its size by half. At the end of two weeks the ulcer was even larger. Again Dr. Cushing turned to his old colleague, and Dr. Sosman still insisted that it was benign. There was no operation. Dr. Cushing lived on; and when he finally died, the *post mortem* showed simply ulcer scar tissue. Dr. Sosman was right.

‡ Three types of pituitary: crowding, growth, and Cushing's Syndrome.

§ Dr. Christian had asked him: “Why don't you see it?”

This includes, as examples, studies on pressure-flow relationships in vascular radiography and the application of therapeutic radiology to the study of immune mechanisms involved in tissue transplantation. Most of the diagnostic techniques are more elaborate, more sophisticated, and more refined (and the therapy techniques are, too!) than at any time in the past. The aim, of course, is to extract from them information that can be woven into a more physiologic interpretation of less complicated, routine procedures which segregate candidates along an ever-expanding spectrum of definitive medical and surgical treatments.

In his forty-third year Dr. Dealy looks about thirty-five, is photogenic in any kind or degree of light, has a highly dramatic sense of humor, a swift appraising glance, an easy precise manner of speaking across the desk or in a clinic. In the spring of 1963 he is and has to be in a dozen places at once—most of them somewhere roundabout his labyrinthine new department: a combination of rooms, labs, cells, console panels, bed parks, dressing areas, scrub facilities, electronic screening, animal farm, supervoltage, pressure monitors; instant warning and instant therapeutics. Dr. Dealy controls all this on an A.B. from Yale and an M.D. (three years later) from Columbia. He interned at the Bellevue, combined a residency program of PBBH at the Children's Hospital, with interval appointments (both pathology and radiology) at other Boston centers. He is Associate Clinical Professor of Radiology at HMS and Consultant in Radiology to the Pondville State Cancer Hospital. Among his more than thirty papers published or in preparation are: *Mitral Valve Disease*, a radiologic approach to a physiologic diagnosis; (with M. C. Sosman) *Irradiation Therapy in Hand-Schüller-Christian's Disease*; *The Theory and*

Practice of Total Body Irradiation in the Dawn of the Homograft Era.

Physically,|| until 1948, the entire radiology department, except for the therapy machine, was located on the south side of the ground Pike to the west of the main building. "Physical growth [for the next ten years, says Dr. Dealy] . . . followed a pattern of contiguous acquisition, ending up in a sprawling department bisected by a main thoroughfare." The most an itinerant inspector of the Pike can say, as *The Fabrick of Man* goes to press, is that—somewhat like a benevolent aneurysm—"the professional personnel hub" of radiology now relates "to diagnostic interpretation in a westerly direction and to therapy and research facilities to the eastward." The latter will be housed in a new building between Main (the rotunda) and the original Nurses' Residence, extending out to Shattuck Street.

The radiologists' new reading room is no retreat in terms of leather chairs, cigar smoke, and picture magazines. It has no windows; no drinks are served. The chairs are few and hard and little used. In one way it resembles a museum: everything of interest depends from the walls. Yet these are not exactly walls, but vertical planes of fluorescent light when all the switches are flicked on. Each switch controls one panel and the stranger observes that the art work clearly changes, not by the month, week, or day, or even by the hour, but by the briefest

|| An engaging reference in the Chief's annual report for 1960 speaks of "a single fluoroscopy room which contained an upright table that couldn't be turned down and a downright table that couldn't be tilted up. The patient had to be sent to another room for films." In such a plant three years ago "were conducted examinations on 17,132 patients, using 39,407 films . . . and 2,230 x-ray treatments."

handful of minutes—ten or fifteen at most. The visitors dress in white. The exhibits are ancient and modern all at once; unframed; black, white, and varying shades of grey. They appear to be uniform in size (14 x 17 inches), stiff enough to be handled roughly and thrust forcibly under the clamps which hold their upper margin. The outlines repeat themselves in the shape of skulls, torso, pelvis, chest cavity, and such; but the designs within are varied as a nightmare and look at times like the ocean bottom viewed from a high cliff on a clear day, and now and then like pieces of a picture puzzle from the jigsaw of a madman, not all of them turned face upward. Anonymous X appears in a set of ten or twelve unflattering views. The Chief talks about them; and through the wall partition b-r-r-r-r goes the drill where plyboard surgeons are at work. The oxbow Mississippi is a muddy stream, but this river colon, flowing south through Mr. X's middle-western states, is white as curd. It is, alas, a somewhat larger river than is evident in his pictures of a year ago. Something has dammed up that was not built with Federal money, and the site selected is not good. Anonymous Y, if you look carefully where the clinic eyes are focused, is sprouting stalks of fungus like the yellow leafy stuff (*mycena galericealata*) that grows in Gothic pattern up inside a hollow stump. These are bad signs, and the tone of talk grows solemn. You catch the words toxidilation¶ of the colon . . . fibrous displasia: the Pagetoid type. You inquire about this matter of irradiation (nothing to do with the exhibit) of the whole body to repress immune response. And what about distinguishing the population of cells involved in the manufacturing or transportation

¶ An Edward Lear or James Joyce word: *toxic dilatation*, really.

of antibodies? You rub your eyes and disappear into the Brigham; and among your notes, reviewed in your private viewing room that evening, you discover:

POSITIVE-NEGATIVE

To make a plotomy
For my lobotomy
They took a shotomy,
Though all they gotomy
Was not a lotomy
But just a clotomy
In this one spotomy—
The real wotswotomy.

§15

TO the layman delving into the vast lore of *materia medica* necessary to assist him in reporting on the healthy state of health of a great hospital, the field of anesthesia has an almost morbid fascination: there is in it all the continual drama of curtains going up and coming down. Fifty years ago all hospitals smelled ominously of ether. Today they do not; and in the Brigham there is no faint trail of it leading to the office door of Dr. Leroy D. Vandam, anesthetist. But there is a whiff of something better, for one is exhilarated by his pioneer enthusiasm for this ancillary branch of medicine into which a turn of his own health (he was trained as a surgeon) long since directed him.

*These are my drowsy days; in vain
I do now wake to sleep again.*

The good anesthetist, one gathers, alert on his patient

watch as is the skipper of a submarine deep under polar ice, submits to no such dormative words as these of Sir Thomas Browne. He who dispenses sleep seems of a sleepless nature. From talk of cones and the Boothby mask* right down to dialed and valved assemblies of a portable persuasion with "the cold and drowsy humour," one becomes aware that anesthesia is at once a highly tinctured science and a four-dimension art wherein the patient in suspended animation moves from plane to plane far under or just out.

In 1946 in Boston the MGH celebrated the Centennial of the *first public demonstration* (three important words) of ether as an anesthetic agent. The demonstrator was Dr. William Thomas Green Morton—and with the subsequent tragic dispute between Morton and Jackson† the Brigham is not concerned. It is constructive to note, however, that the public in general, as with so many inventions of historic importance, failed to consider Dr. Morton's demonstration in the light of historic perspective. "Time out of mind," wrote Sir William Osler, giving full credit to Morton—

time out of mind, patients had been rendered insensible by potions or vapours, or by other methods, without any one man forcing any one method into general acceptance or influencing in any way surgical practice. Before October 16, 1846, surgical anesthesia did not exist; within a few months it became a world-wide procedure.

* Developed by the physiologist Dr. Walter N. Boothby at the Mayo Clinic. He was Supervisor of Anesthesia, PBBH, 1913-1916.

† Dr. Charles T. Jackson, physician and chemist, Morton's sometime teacher. "Jackson was an eccentric genius. . . . When S. F. B. Morse patented the telegraph, Jackson promptly insisted that he had given Morse the idea." *Centennial of Surgical Anesthesia*, compiled by John F. Fulton, M.D., and Madeline E. Stanton; New York, 1946; p. 55.

Morton's *Letheon* was what the demonstrator called it. Dr. Oliver Wendell Holmes (21 November 1846) suggested "Anaesthesia"—preserving the diphthong—and the suggestion prevailed, though John Elliotson, M.D., F.R.S., had used the word‡ in print in 1843 and again on 27 June 1846.

All of which is to say that the drift of experiments up from Nicolas of Salerno's soporific sponge (*spongia somnifera*)—which is Shakespeare's poppy and mandragora; from Pliny; from Joseph Priestley's discovery of oxygen (1771) and nitrous oxide—"laughing gas" (1772); from Sertürner's (1806) morphine; from dozens of others' dozens of ethers straight to the dignified claim (1844 and 1845) of a Hartford dentist, Horace Wells, who had told Morton and other Boston doctors and dentists of his success with nitrous oxide as an anesthetic—all of which is to say there is as yet no clear *Amen*: anesthesiology is still a young science, still at sea though happily sailing under no jury-rig. The landfall—not to change the metaphor—was described over a hundred years ago by the English physician John Snow: "an agent which might be inhaled with absolute safety and which would destroy common sensation without destroying consciousness." This is still the hope of the profession.

Today, when anesthesia is accepted "as a branch of medicine rather than a technical craft," it is hard to believe that well down into the first decades of this century the anesthetic in the operating room (or in the home) was administered by nurses—almost on occasion by anyone handy—often by nurses and people without special training in the field. Dr. Vandam is quick to cite John Snow,

‡ The loss of common feeling—"anaesthesia."

renowned for his humane contribution during the cholera epidemic in London of 1854, as one who led the way in Britain toward the recognition of anesthesiology as a profession. The literature is unanimous on his contribution to "the pharmacology of pain relief."§

Here in the United States the "professionals" of anesthesia from 1880 to 1915 were chiefly the dentists. Dr. Vandam speaks in particular of Ralph Milton Waters, a physician of the Middle West, who became interested in anesthetics in 1915 and was appointed in 1925 to the first chair of anesthetics at Wisconsin—the first in the country. He was the man who asked and answered for surgery the question: "Why the Professional Anesthetist?" A pioneer "of uncompromising scientific honesty," Waters began in Sioux City in 1919 to keep continuous records of patients in a small operating suite (with recovery wards which he provided) where dentists and oral surgeons performed their daily work. Like the late Dr. Emery Andrew Rovenstine, who established a department of anesthesiology at the Bellevue in 1935,|| Waters recognized that until 1920 "anesthesia was still in the dark ages." Although the Mayos as early as 1900 taught nurses to give anesthesia, and many hospitals had their counterparts of anesthetist Gertrude Gerrard¶ of the Brigham, a Dr. Snow** in America did not exist. Even by 1949, when all anesthetics in Britain were administered only by those who possessed medical qualification, it was not so here.

§ Dr. Snow performed 450 administrations of anesthesia (including chloroform) in his last ten years (1848-1858).

|| See "Anesthesiologist," a three-part profile by Mark Murphy in *The New Yorker*, 25 October, 1 November, and 8 November 1947.

¶ Still active in anesthetics at the Boston Lying-in.

** "The greatest anesthetist as well as the first," according to Dr. Waters.

The first endowed chair of anesthesia was established at Harvard in 1917 but remained vacant until May 1936, when Dr. Henry K. Beecher was appointed under it, and became the Henry Isaiah Dorr Professor of Research in Anaesthesia in 1941.

The Anaesthesia Laboratory of HMS at the MGH was the first to be established by an anaesthetist, Dr. Beecher, and devoted solely to the study of anaesthesia and related problems. The laboratory and the clinical department have been inseparable, and the resultant is that of 172 residents and fellows trained clinically, 90 continue in academic institutions. Of these, 23 hold professorships or equivalent in anaesthesia in medical schools in Europe and in America.††

For fifteen years it has taken men like Waters, Beecher, Rovenstine, Dr. William S. Derrick (first anesthesiologist at the Brigham, 1947-1954), and Dr. Vandam to build boldly on the work of Britain's Dr. Snow. By now, across the nation, they have been helped by hundreds of their disciples. Dr. Vandam himself is the kind of teacher who makes instruction seem an effortless art.

One layman registers his guess that surgery is still far ahead of anesthetics,‡‡ since ether remains explosive, and because most gases have their distressing or dangerous potential side and post-operative effects. Dr. Vandam profitably follows the Waters tradition, the tradition of experiment. Just as Snow worked on ether (stabilizing temperature, among other things) and discarded the use of amylene at the end of six months, after two deaths on

†† *A Bibliography of the Publications of the Anaesthesia Laboratory of HMS at the MGH*; Baltimore, 1962.

‡‡ A glance at a certain reference to anesthesia in either of the Cushing biographies will explain why H.C. took an early and intensive interest in the subject.

the operating table, so Waters in October 1930 was the first to use cyclic hydrocarbon cyclopropane (at Wisconsin)—a gas which soon replaced ethylene altogether in the hospital. He was likely the first to administer the new intravenous thiopental to a human, but he never believed in intravenous anesthesia. Nor does Dr. Vandam. In the early forties it was Waters who brought back chloroform as an anesthetic, great pains being taken "to make each administration physiologically sound." And Dr. Waters' work upon CO₂ (carbon dioxide) absorption and upon cyclopropane "is already part of the literature of anesthesia."

Remembering that the Brigham is a relatively small but highly important teaching hospital, let us glance at our 1962 figures under anesthesiology. A total of 3,792 anesthetics were given—about the same as in the previous year. A decrease in ward patients and a compensatory increase in the number of private patients anesthetized is noted. All anesthetics were about equally divided between major and minor cases; some 27% in the poor-risk category. In all, 46 fourth-year medical students participated in 14.5% of the anesthetics. Ether was used in only 4% of administrations; cyclopropane in 18%; nitrous oxide and thiopental in 27%. Spinal, peridural, and nerve blocks accounted for 27%; halothane, newest non-explosive vapor, for 29.3%.

An honor graduate of Brown University, Dr. Vandam's medical career began at New York University College of Medicine, where his studies toward the M.D. degree were stabilized by an easy anchor to windward at the Art Students League of New York. Stethoscope defeating palette, he proceeded at grand rounds through

the Beth Israel, the Hopkins, and the University of Pennsylvania, arriving at the Brigham nearly ten years ago to succeed Dr. Derrick as second Director of Anesthesia. Clinical Professor of Anesthesia at HMS, contributor of some seventy papers to professional journals, he still finds time to edit *Anesthesiology*, official journal of the American Society of Anesthesiologists, Inc., to serve as consultant to various hospitals and on several editorial boards. He is one of three co-authors of *Introduction to Anesthesia*, illustrated by his own line drawings. He is also associate editor of *Survey of Anesthesiology*. Ask what else he does, he will tell you that he paints.

§ 16

THE right food for every patient—a matter of dietetics—has been a primary concern of the Hospital from the day it baked its first pale custard. During 1913 and 1914 there was, to be sure, but one student in the four-months' program in the art and science (for it is both) of dietetics. In 1924 the course increased to six months; and in 1925 it proudly graduated nine pioneering women who received certificates qualifying them as bachelors of the Brigham with full claim to the title of Dietitian. It was understood even then by those who employed these graduates that the emphasis in their training was on a therapeutic, not Lucullan, diet.

In 1926 the course expanded to include an extra month in the social service department of the Hospital; and the records show that in the following year no fewer than 42 young lady interns applied for the course, although the

Hospital, because of space and other limitations, could accept but twelve. In 1932 the course was lengthened to cover eight full months, affiliating in its work and study with the Beth Israel and the Children's Hospitals. As time went on, the run increased still further: in 1934 to nine, in 1935 to ten, and in 1938 to twelve months, which obtains today.

There were other variations in the pattern too. Beginning in March 1921 a Nutrition Clinic met one day each week in the outdoor (later outpatient) department. During this first year of the Clinic, 116 patients received *diabetic* care. All twelve of the then current dietetic interns participated in the Nutrition Clinic which, in 1924, was made a permanent part of the outdoor (outpatient) department; but the name of the first full-time dietitian employed for the educational and special diet Wards* appears on the records one year earlier—in 1923. By 1928 it was standard practice to use house diets as a basis for all special diets; and in the following year a notebook with the common special diets clearly listed was placed in the various Wards and in the outpatient department as a handy reference for the doctors on their rounds. These notebooks were the forerunner of today's more useful diet manual.

In the Hospital now celebrating its fiftieth anniversary, part of the aspirant's training in dietetics is pursued in the Clinical Research Center on metabolism. The current class in dietetics numbers thirteen (a baker's dozen seems an appropriate figure); and the students enrolled are in no sense local. There is one each from Hawaii, Louisiana, Mississippi, Nebraska, Rhode Island, and Texas; two

* Primarily concerned with diabetics.

each from Massachusetts and Ohio; one from the Philippines and two from Quebec. Director of the Dietary Department and School of Dietetics is Miss E. Jane Deckert, who takes the measure of a question or modifies an answer with all the nicety and care that she would put into a recipe or menu. Feeding lightly and well is a heavy responsibility.

Fifty years ago, and up to a matter of but a single month before these pages were being written, each Ward operated its own serving pantry, which meant two short carries or short hauls for trays, with still a reasonable assurance of hot food for all those bedded down. The recent introduction of so-called "Meals on Wheels" improved both speed of service and the desirable quality of food served hot. Each unit providing meals on wheels closely resembles a detached and mechanized section of a modern shining kitchen—which in some degree it is. Since last January all meals on wheels emanate from a newly created Central Food Service Center located midway along the Pike. This Center supplies the cafeteria which feeds 17,400 meals a month to the staff and 19,900 meals a month to the patients.† The Center also caters to special groups such as visiting cardiologists, radiologists, and the like. A separate coffee shop, with its own private kitchen, is located at the rear of the rotunda and is maintained by the Friends of the Brigham. Its hours are 9:15 A.M. to 4 P.M. Wives of trustees and staff members do voluntary service behind the counter and cash register. Bright uniforms, the clean, well-lighted room, and a cheerful atmosphere contribute to an astonishing day's turnover:

† This is nearly 450,000 meals a year: a generous helping for a small hospital when one reflects that Harvard University serves but 4,000,000 in the same twelve months.

1,400 lunches (hot and cold dishes), 1,500 cups of coffee, 300 sodas and soft drinks, countless snacks.

Meal hours in a hospital are stricter—they have to be—than even those of a finicky short-handed summer hotel: breakfast 7-9 A.M.; luncheon 12 M. to 1 P.M.; dinner (largely because of bus schedules and other traffic problems affecting nurses and the staff) at the awkward hour of 5-6 P.M. There is, of course, special cooking if desired for private patients; and one night, prowling about on the Wards, I heard some spirited talk on the part of a patient possessed of both appetite and culinary knowledge as to the broiling and saucing of mushrooms. As in most hospitals: custards, soup, jello, eggnog, frappes, and kindred drinks and dishes are available on call—diet restrictions and condition of the patient's health permitting. More than half (60%) of the Brigham patients *are* on modified diet. For the ambulatory, including staff and visitors, the coffee shop at the hours mentioned above, and the Brigham on a round-the-clock schedule, are available to all and sundry. The Brigham—complete with 25-50¢ coin changers, offers hot and cold drinks, hot canned foods, candy bars, and crackers. Most of those who use it are in uniform, relaxing from thermometers, stethoscope, and pharmacopoeial problems.

An army travels on its stomach, but a patient's stomach does no traveling at all. Examination of some current Brigham menus, however, shows that at least the patient has a traveler's variety of choice. Breakfasts are apt to include Pettijohn, grilled Canadian bacon, eggs, blueberry muffins; lunch offers green peppers stuffed with rice and cheese, rare roast sirloin of beef *au jus* with Yorkshire pudding, sherried sweetbreads with mushrooms on toast

points, a child's garden of vegetables; dinner suggests cubed steak in onion gravy, oyster stew, roast leg of veal, baked stuffed pork chop, seafood Newburgh, and a three no-trump bid of desserts. This is far from any selection of menus (*sic*) at a nursing home suggested by the British humorist Nathaniel Gubbins:

Aspirin varié
Consommé mystérieuse
Oeufs au lait Bonne Femme
Grand Injection Morphine
L'eau

§ 17

A FEW brisk steps down the Pike from the main building you will find the Blood Bank; and should you have an extra unit of acceptable red stuff in your veins, you may freely give it. The Director, Dr. Nathan P. Couch, a Junior Associate in Surgery and Instructor in Surgery at the HMS, is not, however, so engrossed with accumulation and storage of whole blood (80 units or pints the minimum on hand) or indeed with work in subclassification or crossmatching of blood in the subgroups. One of his chief concerns at present is to discover ways to preserve living tissue—kidneys as of now; liver as of the immediate future; glands and even hearts, quite possibly, as time goes on. The Blood Bank, in its fresh new quarters, has the ultra-sanitary look of a splendid showroom.

Dr. Carl W. Walter, Surgeon at the Brigham and Clinical Professor of Surgery at the HMS, former Blood Bank

Director and Consultant to Central Supply,* an inventive and extraordinary man, developed in the Brigham the plastic blood bag now widely used elsewhere. A pragmatist at heart, he is the author of what is surely the Brigham's most universal book—a volume already mentioned, truly international in reputation and influence. This is *The Aseptic Treatment of Wounds*.† Ingeniously illustrated by Mildred B. Coddington, M.A., Surgical Artist at the Brigham, it amounts to a hospital in itself, from indexed *aerosols* to *zinc alloy in instruments*.

As Dr. Couch takes over as Director of the Blood Bank [currently writes Dr. Francis D. Moore] Dr. Walter will join the Blood Bank Advisory Committee and gain some free time for study of his many interests. He leaves to the younger generation a bank that is expanding and building after twenty-five years under his able hand in woefully cramped quarters . . . now emerging into a new and modern building.

In previous reports I have given an extended account of Dr. Walter's many contributions. Although it is not necessary to repeat this here, it is most appropriate to indicate at this time the gratitude not only of the Brigham Surgical Service but of the whole hospital, and blood banking nationally, to Dr. Walter for his many advances. Starting with his initial studies in the proper sterilization and preparation of solutions for intravenous use, his perfection of methods of fluid-packaging, he then contributed widely to blood banking technology itself, particularly through the development of plastic transfusion equipment. This development is entirely his and is a major invention in the medical world for which due credit must be given. Plastic transfusion equipment permits the longer preservation of red blood cells, the lighter and safer packaging of blood, the cheaper administration of transfusions, and above all the safer infusion of blood.

* During World War II Dr. Walter's headquarters (at least to one donor) were known as the Copley Plasma.

† Macmillan, 1948.

Blood, of course, needs a heart. The off-beat heart needs and gets Dr. Bernard Lown's PBBH Defibrillator. It stops (shocks) and restarts the heart in normal rhythm.

§ 18

LIKE a dynamo feeding current to a throbbing city, the hospital lacks only dials on a master switchboard* to tell us minute by minute how things go. By checking each of many departments and offices, the visitor may easily compile his own set of average figures. Ask what happens any twenty-four Brigham hours, midnight to midnight, and this is the answer in administrative terms:

Patients admitted, 21; patients discharged 20; blood donors, 12-15; X-rays taken, 160; operations performed, 15; units (pints) of blood transfused, 15; patients admitted to Emergency, 34; alcoholics admitted to the Clinic, 6; cubic meters of water used, 21,000; kilowatts of electricity AC, 8,200; kilowatts DC, 230; meals served: see section 16. As to plant, maintenance, and personnel, a spot-check shows in spot-check language: mail sorted; invoices, purchase and work orders checked; absent personnel checked; storage cabinet modifications checked; individual parking problem solved; quotes revised on proposed acoustic ceiling; paint project in F Main taken care of; carpenter dispatched to Huntington Residence; refrigeration man for OR air conditioning unit; G.E. equipment and light units checked; various projects discussed with various people;† recall by acoustical contractors; air conditioning problems and projects reviewed with outside contractor; proposed still (*sic*) installation in lab; respecting heat output bothering air conditioner, reviewed with doctor; two prospective employees interviewed.

* Plausible item in the world just round the corner.

† Or was it *virus projects discussed with virus people?*

§ 19

“When one has passed the three-score mark it is perhaps permissible to believe that the open discussion of one’s hopes may encourage and stimulate younger investigators, at least as much as does the impersonal, coldly scientific presentation of advances in our knowledge.”

DR. CHARLES H. BEST

ANY account of the Peter Bent Brigham Hospital would be wholly incomplete without hearing directly from the doctors and administrators. In the following brief record I am quoting out of context certain things which have been said in the Annual Reports by various individuals—largely by chiefs-of-staff*—across the span of fifty years. Filled with clinical facts, personal and personnel histories, notes from the record, laboratory analyses, prognostication and prognosis, there runs throughout each annual accounting vivid tracer evidence of family venture and family loyalty. The choice in every paragraph has been the writer’s: one layman snipping out what gravid words he thinks another layman will enjoy and understand. Now and then occurs a flash of wit;† and there is always compassion even in the midst of polysyllabics. And in reporting reporters one does look mainly for the visual, the unusual, the swift brush of drama. Because he figures large in previous pages and in the Brigham image, there is little here from Harvey Cushing.

Most of the passages which follow are by Dr. Thorn

* Medicine, surgery, pathology, radiology.

† Dr. Sosman’s account of his own operation is given private patient care in section 19a.

and Dr. Moore. This whole book—small as it is—reflects many complex elements of the Hospital; but it almost continually reflects the senior services: medicine and surgery. This is the place, therefore, to speak (though briefly) of two remarkable men who followed, respectively, Drs. Christian and Weiss and Drs. Cushing and Cutler. Each carries a heavy load; but each knows how to carry it.

Dr. George W. Thorn, the older of the two—sandy-haired and youthful in appearance—is a quiet, deeply forceful man: one who clearly never wastes either time or motion in whatever he does or when he does it. He took his M.D. at the University of Buffalo in 1929, served as House Officer at the Millard Fillmore Hospital in Buffalo, and taught three years at the University of Buffalo. He was twice a Rockefeller Fellow in Medicine: HMS and MGH (1934-1935); Johns Hopkins (1936-1937) where he taught until 1942. Before becoming Hersey Professor of the Theory and Practice of Physic (HMS) and Physician-in-Chief at PBBH, both in 1942, he had served for one year as Assistant Professor of Physiology at Ohio State. Consultant to various Hospitals today, an Honorary Member of the Royal Society of Medicine, Dr. Thorn has received many honors: among them, two Canadian degrees and two gold medals from the A.M.A.

Dr. Francis D. Moore, like Dr. Cutler before him, is all Harvard: A.B. 1935, M.D. 1939. He interned, was Assistant Resident and Resident, at the MGH—the Hospital whose name goes echoing through any history of Boston medicine. He began his teaching at HMS and was Assistant Professor 1947-1948, moving into the Moseley Chair in the latter year. In 1952 he was Consultant to the Surgeon General. His picture this May on the cover of

Time reflects the universal respect with which he is held in his profession. His writing (one observer thinks) continually reflects his theoretical mind. Among his honors are: Visiting Professor of Surgery, University of Edinburgh, London University; also California, Colorado, St. Louis; M.Ch., National University of Ireland; Harvey Society Lecturer, 1957. Kinetic is the word for him: he seems always in motion even when composed. He and Dr. Thorn are a powerful binary. And their reputations are international.

* * *

Please to remember that whereas the early Brigham Annual Reports, all full of tables, were by no means the size of what you are now reading, the present departmental reports of either the physician-in-chief or the surgeon-in-chief are apt to contain as many words as one half of *The Fabrick of Man*. To choose out of thousands of pages the best words about important or existing problems was not easy. But the range is reasonably wide; and things not covered elsewhere are touched on here.

All excerpts are arranged chronologically; each is signed with unobtrusive initials. See below for key.

1913-1914

Departmental reports are usually perfunctory things. A busy university colleague tells me that there is but a single way to

[H.C.] Harvey Cushing; [C.P.C.] Charles P. Curtis; [H.A.C.] Henry A. Christian; [M.C.S.] Merrill C. Sosman; [F.W.B.] Frances W. Bowen, Principal, School of Nursing; [D.C.] David Cheever; [G.W.T.] George W. Thorn; [E.E.S.] Elsa E. Storm, Director of the School of Nursing; [D.T.N.] Dorothy T. Nichols, President, Friends of the PBBH; [A.R.M.] Alan R. Moritz; [R.C.] Brigadier General Robert Cutler; [N.A.W.] Norbert A. Wilhelm; [F.D.M.] Francis D. Moore; [F.L.M.] F. Lloyd Mussells; [J.B.D., Jr.] James B. Dealy, Jr.

prepare one—so badly that you will never be called upon in the same capacity again. Judging from a glance through various hospital reports, this advice may sometimes be followed. [H.C.]

1916

We have been glad to accept a request from the United States Government to study into the effects of caffeine on the human body; this work will be done under the direction of Dr. Henry A. Christian. [C.P.C.]

1918

During the hay-fever season 134 new hay-fever patients were studied. Of this number 30 were prevented from having hay fever at all, 15 others had only very slight symptoms, 25 others had what they called "some" hay fever but they stated that they were satisfied with the treatment, 16 were not benefited at all, 18 were either too late for treatment or came only for diagnosis, and 30 have not reported on the results of treatment. [H.A.C.]

1939

For almost twenty years [Dr. Joseph B. Howland] worked wisely, intelligently, to maintain the efficiency of the Hospital and to lighten the burden of the work of all on the staff of the Hospital. A skilled hospital administrator, quiet in manner, diplomatic but not lacking in forcefulness, wise in the ways of medicine, a gentleman in the best sense of that word. [H.A.C.]

To be an able clinician one must hold stored in his mind the details of a vast number of patients that he has studied as well as the results of those studies by others that go to make up medical literature. All of this depends upon trained memory. [H.A.C.]

In the arrangement of the work at the Brigham it has been a constant effort to place such facilities for study and investigation, as we have had, at the service of those men most capable of utilizing them to the best advantage without at the same time forming air-tight compartments into which new ideas of others

might not freely penetrate. Petty jealousies, happily, have remained rare. [H. A. C.]

On September 1 next I retire under the rule of the Trustees adopted in the beginning of the Hospital on the recommendation of Dr. Cushing and myself; a wise rule, which in my opinion should never be violated. [H. A. C.]

The demands of the American Board of Surgery have been a major influence in securing effective training for the young surgeon. It should be a satisfaction to Brigham Alumni that the Surgical Service here, modified since its inception only by the addition to the intern service of the year at the Children's Hospital, is one of the few in which no changes had to be made to fit the complete requirements of the Board before accepting candidates for examination. The routine training of the young surgeon at the Peter Bent Brigham Hospital consists of (1) the joint Peter Bent Brigham Hospital-Children's Hospital internship of twenty-nine months, (2) a year in a laboratory for which we have each year three fellowships: the Arthur Tracy Cabot Fellowship, the Harvey Cushing Fellowship, and the George Gorham Peters Fellowship, (3) the Assistant Residency of sixteen months, and (4) the Residency. [E. C.]

1942

A major tragedy in the professional history of the Hospital, and one probably in part due to his strenuous participation in the military councils, was the death of Soma Weiss on 31 January 1942. . . . His record of achievement up to his death at the age of 43 was tremendous. . . . To know him was to love him.

[M. C. S.]

1943

Work which Dr. Cushing initiated is still going on and we are still caring for some of his former patients at regular intervals. [M. C. S.]

The need for nurses today is acute. The increased enrollment of student nurses is an essential responsibility of ours in fulfilling

this need. We are faced with the fact that conditions in nursing do not compare favorably with those in other fields, to which women are attracted at this time. [F. W. B.]

The tragedy at the Cocoanut Grove night club which caused more casualties than have occurred in most air-raids in the combat areas, found us prepared but hardly called upon, for three-quarters of the casualties brought to us were beyond human aid on their arrival, and the other seven or eight presented, with one exception, but trivial injuries. We wish that we could have done more, and especially that we could have shared the terrific burden of the Boston City and Massachusetts General Hospitals. We were able to furnish reserves of plasma from our blood bank where they were needed. [D. C.]

1947

One of the rarer privileges granted to the Chief of Service is that of recommending the appointment annually of a Physician-in-Chief *pro tempore*. The wisdom of such a custom becomes more apparent with each incumbent, and the anticipation with which the arrival of the new Chief is awaited leaves no doubt as to the stimulation which the entire staff experiences during his residence. [G. W. T.]

The high degree of specificity of certain antibiotic agents for various types of pathogenic organisms indicates the need and importance of careful bacteriological studies in the treatment of patients with infectious diseases. To permit the needed expansion in this field, additional laboratory space for Bacteriology has been provided on the ground floor of the Tackaberry Laboratory Building [facing into Shattuck Street]. [G. W. T.]

The hospital day beginning at eight o'clock instead of seven in the morning has been accepted very favorably by all the nurses, although one nurse on each ward goes on duty at seven o'clock as well as the entire operating room staff, and some of the out-patient department nurses. [E. E. S.]

The original "Chiefs" of the two services, Cushing and Chris-

tian, when faced with the pressure to enlarge the Hospital, wisely decided to keep it small, preferring a small number of patients, carefully selected and very thoroughly studied, to a larger and more heterogenous hospital population without the integration in and between services and departments which would be lost by doubling or tripling bed capacity. [M. C. S.]

We are happy to report that a number of dead poplars were removed through the cooperation of Dr. Wilhelm, and the dead wood was cut from the remaining poplars. There will obviously be a need of the columnar maples growing in the nursery. [Mrs. Karl Sax reporting to D. T. N.]

1948

The scientific pace of the institution is set by the medical and surgical services because both of them consist of complete University departments with staff and facilities for teaching and research as well as for the care of patients. The pace is fast and it should be so. Unfortunately pathology with its eight-knot power plant is in the difficult position of trying to keep pace in a convoy geared to the speed of fast cruisers. [A. R. M.]

Doctor Samuel A. Levine was promoted to Clinical Professor of Medicine [at HMS]—the first Brigham Medical Staff member to be so honored. In our institution, the attributes which Doctor Levine has demonstrated untiringly over the years are perfectly exemplified by the title “Clinical Professor.” Dr. Levine was further honored this past year by being asked to present the St. Cyres Lecture before the Royal Society of Medicine in London, on the subject of “Auscultation of the Heart.” [G. W. T.]

1950

*A calligraphic master, improvising, you invent
The first incision, and no poet's hesitation
Before his snow-blank page mars your intent:
The flowing stroke is drawn like an uncalculated inspiration.*

After the first war Dr. Cutler and Dr. Levine—surgeon and internist working together—attempted to solve this mitral steno-

sis [heart valve] problem with the tools which were then at hand. Intrathoracic surgery was still in its infancy. Dr. Cutler had done intrathoracic and intracardiac surgery in animals, but the application to the human was still held back by lack of established principles for intrathoracic anesthesia. There was no good way of following the physiologic progress of the patient. One could examine the patient by clinical methods then available to the cardiologist, but there was no way to separate one type of mitral stenosis from another or to detect minor degrees of change. Dr. Cutler's operation required some dislocation of the heart from its normal position in the chest and involved a wound of the ventricle. Results were disappointing. The mortality was high and the project lay dormant for many years, although with keen foresight Dr. Cutler recognized that a day would come when this field of surgery would again develop and thrive.

Between 1923 and 1940 a great many things happened in American surgery which were to affect the mitral stenosis problem: the development of technique in anesthesia for thoracic surgery, the further perfection of blood transfusion, the discovery of antibacterial substances and later the antibiotics. This period saw the gradual development of cardiac surgery itself through the operation of pericardiolysis and the early stirrings of major vessel surgery. All these were signs of a new border being crossed.

In 1940, Dr. Dwight Harken returned to Boston from his year in England with Mr. Tudor Edwards and took up a residency at the Boston City Hospital. During this time he spent many hours in the laboratory, and in August of 1942 published an article entitled "Experiments in Intracardiac Surgery." His original idea had been to invade the heart surgically through the auricular appendage to excise the vegetations of bacterial endocarditis. Again surgery had posed a question: "May we operate within the human heart and rectify major valvular disease?" Surgery also sought an answer. In this case the initial approach was to the experimental animal, that unsung hero whom a few agitators would like to remove from the scene!

During this work Dr. Harken found to his interest and surprise that the function of the two mitral valve leaflets was very different. The aortic, or major leaflet, had to be preserved intact. If it were destroyed, one wall of the aortic outflow tract was gone and the animal soon died of mitral regurgitation. This observation was of fundamental importance several years later when mitral surgery was being revitalized. It was a basic conceptual advance. Twenty years previously we had assumed mitral regurgitation to be the price of relieving mitral stenosis. Now Dr. Harken knew that stenosis could be relieved without adding such a burden to the already sick heart and lungs, providing the surgeon did not disturb the aortic leaflet.

The war intervened; the investigator found himself treating soldiers with wounds of the heart. Besides the development of operative techniques and personal facility with cardiac surgery, one further observation of fundamental interest was made. Dr. Harken saw that dislocation of the heart from its normal position in the thorax resulted in the development of sudden arrhythmias incompatible with life. If the heart were returned quickly to its position of optimum function, normal rhythm was quickly restored. Here was a guiding principle for further work and here was an explanation for some of Dr. Cutler's difficulties twenty years before: not only had he entered through the ventricular muscle—which in itself must carry some special hazard—but he had found it necessary to dislocate the rheumatic heart from its normal position, a dislocation that the hearts of well-conditioned soldiers could not tolerate.

With this background, Dr. Harken commenced his first clinical work with mitral stenosis in the spring of 1947. The basic premises were (1) to approach the mitral valve from above rather than through the ventricle, (2) to operate on the heart without dislocating it from its normal position, (3) to remove only portions of the lesser leaflets, thus leaving the aortic outflow tract intact and avoiding regurgitation, and (4) to use the superior pulmonary vein as the port of entry.

The progress of knowledge often simplifies rather than complicates. This was true with the technique of valvular surgery.

Many complex instruments were developed and used in these early operations. The results were disappointing; the instruments were hard to control. Several of the early patients failed to survive. All had been operated upon in a far advanced and hopeless stage of disease and approached their operation knowing fully its formative character and the hazards it entailed. We are apt to think of the long hours of work or difficult problems faced by the investigator. There are many occasions when we must also recognize the knowing sacrifice of those dangerously sick patients who are willing to take well-understood risks in the interest of more than personal benefit—in the assurance of benefit to others.

During this phase of the mitral problem—which might be called the “valvulotome phase”—Dr. Harken also took every possible opportunity to examine post-mortem specimens of mitral stenosis in the Boston hospitals. It is interesting to reflect that although the sciences of normal and morbid anatomy trace their beginnings back at least to the publication of the *Fabrica* in 1543, specific problems are still raised which these sciences have not answered because attention has not been so focused. The preserved human heart in a museum of pathology was no help to Dr. Harken. Only by returning to the role of pathologist and studying pathology for himself could he determine that he might open up the “fishmouth” mitral orifice and still maintain the leaflets intact. He must somehow open up the fusion bridges which convert the two mobile leaflets into a single rigid tube. He was also encouraged by the clinical course of one of the patients who had had a valvulotome operation. She was the first patient in whom there was objective evidence of clinical improvement. This young lady, previously crippled, became well, active, and even able to indulge in sports.

. . . *I can feel the valve
Breathing freely now around my finger, and the heart working.
Not too much blood. It opened very nicely.*

The problem then (early 1949) seemed to rest on the question of how to control the intracardiac manipulation which broke

apart the fusion bridges of the valve. The surgeon's finger, endowed with a sense of feeling and position, was clearly more controllable than any other device. Instead of using a complicated instrument through the difficult approach of the superior pulmonary vein, the surgeon's finger was introduced through the auricle itself and the two fusion bridges were broken apart. Fracture is a good word for this procedure. The fused valve is rigid and the rigid area breaks where it is difficult or impossible to cut. With experience in a few more cases, it became apparent that the fracture of the valve made by the surgeon's finger through an opening in the auricle had made possible an entirely new evaluation of valvular surgery because it was done with a new order of accuracy.

The selection of cases was not easy. One possibility would have been to select patients who were not very ill, feeling that they might recover more easily. This would hardly yield information about the value of the procedure. A much more critical approach would be to select patients who were severely ill and whose outlook was very limited; this was the approach Dr. Harken selected. His selection was based on the studies of his medical colleagues in the cardiac laboratory.

As testimony that this selection was realistic, we must point out that of 16 patients selected for operation but who were not operated upon, 14 are now dead, 11 within six months of the time when surgery was advised. Forty-two other patients in exactly the same sort of situation have now been operated upon; 29 are now alive and 24 are outstandingly successful. [F.D.M.]

*... For this is imagination's other place,
Where only necessary things are done, with the supreme and
grave
Dexterity that ignores technique; with proper grace
Informing a correct compassion, that performs its love, and
makes it live.*



The lines quoted are from *A Correct Compassion* by James Kirkup, Oxford, 1952. The title poem in that volume is the remarkable result of watching Mr. Philip Allison perform a Mitral Stenosis Valvulotomy in the General Infirmary at Leeds. The Surgeon is an Honorary F.A.C.S.

1950-1951

The year 1950 has happily drawn still closer the ties which bind us to our great neighbor across Shattuck Street, the Harvard Medical School. We have found in the new Dean, Dr. George P. Berry, a wise, patient, and farseeing administrator, friend, and man of medicine. It has proved a delight to work with him on projects of common interest. [R.C.]

“To give stability to the important investigation being carried on at the Brigham Hospital, and to permit expansion into fields for which there is little or no support today, there is need for a *continuing* ‘fund for research and development.’” [R.C.]

Current practice encourages surgical patients to sit up in bed and even “dangle” their legs over the side within twenty-four hours after a major operation. Permitted to do this, it follows that the patient can safely wash his hands, face, and teeth, and even shave in this position. He not only can, but does, for we have had six months’ experience with this part of the design in twenty-three rooms on Ward B. The experience on this ward has shown the idea of placing the wash basin next to the bed is sound. A by-product, which was not entirely unexpected, has been the stimulus to morale that results when a bed-confined patient is permitted to wash his face, teeth, and even shave unassisted by anyone. [N.A.W.]

During the past year the national and international importance of our hospital is attested by the fact that fifteen senior members of our medical staff delivered approximately 80 lectures *outside of the State of Massachusetts*. A majority of the forty-eight states were visited by these lecturers, as well as Canada, Great Britain, Denmark, France, Switzerland. [G.W.T.]

In many respects surgery is an art; it is also a creative science.
[F.D.M.]

Suffice it to say that we are going to be able to measure the total body water of a sick patient on admission to the hospital and state whether his disease has produced weight loss mostly

at the expense of body fat, of body water or of the lean muscle tissues which constitute the body "engine." The question of which sort of tissue has been lost has important bearing on the patient's reserve and his ability to withstand the injury he has suffered or the operation which is contemplated. Body fat is a sort of reservoir of caloric energy. Body water and lean muscle are essential to withstand the acute disorders of injury and surgery. We are coming much closer to a precise definition of "surgical risk." [F.D.M.]

A third, and probably the biggest addition to our equipment, was a Westinghouse angiocardigraphic unit, complete with an automatic Fairchild camera and automatic time-relay switches, for the investigation of cardio-vascular abnormalities, and vascular lesions in the brain, lungs, and abdomen. This powerful but complicated unit was made available by a grant from the Hyams Foundation, and is supported by a grant from the Public Health Service. . . . Another Grant-in-Aid from several sources enabled us to build and equip a dark room adjacent to the unit, making it independent of our main department. [M.C.S.]

Their viewing rooms, or consulting rooms [in the Scandinavian countries], were larger than our whole department. Each viewing room was completely lined with view-boxes, and a section of each was assigned to each specialty or division. All of the films† to be interpreted that day were on display, and the staff men, residents, and students either began or ended their ward rounds with a thorough discussion of the radiological examination with all the clinical and laboratory information at hand and available. [M.C.S.]

We join the rest of the staff and the medical world in general in sorrow over the death of Henry Christian on August 24th at the age of seventy-five. He was one of the medical giants of his day, and did much to give the Brigham its outstanding position in its early years. The names of Christian and Cushing will always be revered . . . by the Brigham family. [M.C.S.]

† "Swedish radiology at present is about the best in the world, and they excell us in the States along many lines." [M.C.S.]

A surgeon in a nearby institution had owed us quite a large sum of money. On this particular day of high finance, he had seen fit, doubtless with some hidden motive, to enter the office and pay the entire bill in one-dollar bills. This money being received, we were threatened with the necessity of falling back on the Brink's Express Company to deal with this unusual problem in surgical removal. [F.D.M.]

The daily joy of caring for patients on our wards in company with the finest postgraduate students of surgery, known to Broadway as "men in white." Conduct of research in the metabolism of surgical patients: one of the world's most rapidly growing bodies of knowledge. I contemplated happily the daily care of private patients, always a pleasure because of the unique personal relationships which exist in practice. . . . The important point is this: the patient is beautifully and effectively cared for in an atmosphere of inquisitive learning. [F.D.M.]

Dr. Quigley has the responsibility of care for the athletic injuries suffered by Harvard's athletes. A part of this activity was the now-famous collaborative study of the adrenal response in the Harvard crew before the Yale race. [F.D.M.]

Dr. [William S.] Derrick is evolving a new residency program in anesthesia. It is always much easier to develop residency arrangements where there has been a residency before! In the 38 years of its existence, the Peter Bent Brigham Hospital never had a resident in anesthesia prior to 1950. [F.D.M.]

Our confidence that gynecology should remain a part of general surgery is expressed by the fact that our gynecologic patients are taken care of entirely by the general surgical house staff. Our conviction that there is an area here for special interest, where research and clinical guidance can come best from a man who has spent his career interested in these problems, is expressed by the appointment of Dr. Somers Sturgis to our staff. . . . The Laboratory enterprise in gynecology, as a whole, has been financed by generous grants from the American Cancer Society, Massachusetts Division, Inc., The Milton Fund, The

Anna Fuller Fund, The Ella Sachs Plotz Fund, and the United States Public Health Service. [F.D.M.]

Dr. [Dwight E.] Harken's widening experience in the surgery of mitral stenosis[§] is a matter of international repute. Visitors from all over the world appear in a steady stream to learn the techniques of this new field of surgery. The rapidity with which such a field ceases to be "new" and becomes "accepted" is frightening. . . . This year, Dr. Harken could comment that mitral stenosis operations are being done in so many hospitals in the country that the only cases now referred from elsewhere for surgery here are the "tough ones" that the inexperienced man does not wish to undertake! Through this year 183 patients have been treated surgically for mitral stenosis. [F.D.M.]

In 1933, 28 blood transfusions were given on the basis of 28 blood donations. During that year 2,132 operations were listed as having been carried out. In 1951, the total number of operations was 2,780. On the face of it, this is a 30% increase. Yet the magnitude of the surgery is such that the actual increase is somewhat greater than this. During 1951 3,000 blood donations were given and 2,550 blood transfusions. The facts speak for themselves. . . . In 1932, 109 intravenous infusions were given and 260 flasks of intravenous solution were prepared. In 1951, 10,479 intravenous infusions were given and 58,000 were prepared. [F.D.M.]

It is therefore a tribute to these advances that the plastic blood bag [see p. 83], the plastic intravenous tubing with laminar-flow needles, the sterilization of syringes without wrapping and assembled with small sterile covering over the needle hub have all progressed in acceptance and use. [F.D.M.]

Universal pessimism as to the results which might be achieved . . . came in for a shock when some of these transplanted kidneys lived and a very few of them secreted not just capillary ultrafiltrate, but good honest urine. To those laymen who may strug-

[§] Note well the surgeon's choice of words in this sentence: *widening* . . . *stenosis* (a narrowing).

gle through this report, it might be surprising to refer to urine as something that is good, but if you ever find yourself without it, you will gain an appreciation of its virtues. [F.D.M.]

By alterations in the schedule, we have now expanded [third year teaching] to include the tumor clinic, gynecology, the surgeon-in-chief's clinic, rectal clinic, and peripheral vascular clinic. We have instituted the amusing and sometimes confusing procedure of taking a written account from each medical student at the completion of his third and fourth year course here, describing the course in his opinion. [F.D.M.]

It is of interest that starvation or large doses of cortisone inhibit wound healing. But wound healing is a basic biological reaction that is remarkably difficult to inhibit in any other way. Until we understand methods of inhibition of wound healing in the animal, we will not have a very good insight into those factors which inhibit wound healing in man. [F.D.M.]

Over 85% of all patients who succumb to cancer, extensive surgery, or acute trauma, will be found at postmortem examination to have pathological changes in the liver. If the pituitary is the keystone of the endocrine system, the liver is the keystone of the exocrine glandular interrelationship of the body. Few new techniques have become available for study of alteration in liver function following surgery or acute disease. Dr. Charles Macgregor is making a start in this complex and well-worn field. [F.D.M.]

The pathologist, taking the clues given him by the surgeon at the operating table, often determines the whole future course of clinical care. [F.D.M.]

1952

The Edinburgh system of medical education is to a much greater extent based on didactic lectures and instruction of large groups than the curriculum with which we are familiar here at Harvard at the present time. Whenever our curriculum is discussed at meetings of the Harvard Faculty, the question

arises as to whether or not we should divide our classes even further and move still more in the direction of small group, individual, bedside instruction. . . . Possibly the whole purpose of medical education is to bring a promising student together with an effective teacher. What framework is used must indeed be rather unimportant, for the students at the two schools—Edinburgh and Harvard—instructed by widely variant schemes, are equally competent. [F.D.M.]

Taken as a whole, the program of urologic service is a most extensive and well-rounded approach to many of the outstanding problems in the field of urology. Our urologic service is not a large one, averaging about 15 patients in the hospital. It is a tribute to Dr. Harrison's ingenuity and energy that such advances and such extensive study may be completed without the availability of a very large number of urologic beds. [F.D.M.]

The respiratory assistor is a device which takes over the functions of the diaphragm by a rhythmic alteration of pressure relationships in the airway. It is important for the nonmedical reader to recall that the lungs themselves have no muscle and that the variation in air pressure in the tracheobronchial tree which results first in inflow and then outflow of respired air is produced by contraction and then relaxation of the diaphragm. When the chest is open or the diaphragm ineffective for other reasons, an external pressure cycle must be imposed to maintain good exchange and oxygenation. The assistor accomplishes this automatically and with a high degree of control of amplitude and frequency. . . . The development of this device and its study have been a joint effort of Dr. Derrick's department and of the Department of Physiology of the Harvard School of Public Health. [F.D.M.]

For the person carrying out any sort of investigation, the writing of an article still constitutes an intellectual discipline of great significance. It means that the work has to be pushed to completion. It means that procrastination of the evil day is no longer tolerated. It means that the mind has to be made up as to what the work signifies. It means that the literature must be

encompassed; and finally, it is a neat little exercise in the use of the English language. [F.D.M.]

The kidney transplant project provides an extremely interesting long-range program of co-operative research and it is hoped that significant results will be obtained relating to the fate of tissues transplanted from one patient to another. [G.W.T.]

New technics have now made possible the study of those substances in living systems with reference to their occurrence in cells and tissues and their function. The terms "trace elements," "micro-elements," and "oligometals" usually include such substances as aluminum, antimony, arsenic, barium, boron, bromine, cadmium, chromium, cobalt, copper, fluorine, gallium, iodine, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, rubidium, scandium, silver, strontium, tin, titanium, vanadium, and zinc. Many of the oligo-elements or trace substances appear to be essential to life. [G.W.T.]

1957

In the past the student of disease had to be satisfied with a view of structure allowed by the light microscope, whereas in these last years his vision has been extended to the level of sub-microscopic structure of whole molecules and, indeed, of their biologically active subgroupings. [G.W.T.]

The Routine Bacteriology Laboratory has had an extremely busy year. It has performed 47,558 bacteriologic examinations, including 30,499 sensitivity tests. This again represents an increase of 62% in total tests over last year. Miss Alice Kaprielian, Chief Bacteriologist, has performed a magnificent job in taking on this extra amount of work. [G.W.T.]

The Emergency Ward problem has grown more urgent. Perhaps all the factors responsible for the steady increase in patient traffic in this area are not known. However, the function of this vital area threatens to collapse at times due to serious overcrowding. Frequently both adjoining clinic areas are completely filled and waiting space is at a premium. Certain patients

such as those with head injuries must have a place to lie down—with heavily-taxed facilities even this maneuver is difficult to accomplish. With problems of traffic and crowding, the accessory problems of food and linen supply become even greater. *As mentioned before, the public measures our abilities here with a more critical eye than in any other area.* [G. W. T. The italics have been added.]

Further development of transplantation of the kidney required first of all the development of the artificial kidney by Dr. Thorn, Dr. Walter, and Dr. [John P.] Merrill and, secondly, the presence of a competent surgical team to deal with both the urologic and the transplantation aspects and a medical team to evaluate the renal functional components. And thirdly, the particular atmosphere of the Brigham Hospital was needed for success in this field. Although this is listed third, it may well be the most important: the friendly interchange of ideas in which new things can be worked out without cross-currents of competition or professional jealousy and in which the difficult logistic problems can be solved with a corridor conversation or telephone call. This sort of joint clinical development is much more difficult and complicated than is the “arbeit research” of the isolated research foundation. We should remember this, should the Brigham ever begin to show signs of a division between the investigators—shunted off in some big new research building somewhere—and the clinicians who actually take care of patients. When these are separated, academic *rigor mortis* is not far off. Their unity is essential for advance. [F. D. M.]

The bone marrow situation becomes especially interesting in the light of the newly established fact that bone marrow itself may be transplanted by the simple act of transfusion. The marrow may be taken out of bones, freed of the little bony spicules within it and then injected through an intravenous needle just like a blood transfusion. In normal subjects there seems to be no effect. But when the organism is lacking its own bone marrow because of destruction by irradiation, the new bone marrow which is healthy and has not been irradiated seems to find the

places in the body where marrow likes to grow. Here it stops its wanderings, rests, takes root, claims a new homestead, and proceeds to make its own cells. This step is of importance since it might provide a way of treating people who were injured by whole body irradiation; bone marrow transfusion may have some place in the treatment of the casualties of atomic warfare.

[F.D.M.]

1961

During the year an arrangement was worked out with the Town of Brookline and the Beth Israel Hospital whereby the latter and the Brigham would each care for approximately half the patients that the police bring to the hospitals as emergency cases. [F.L.M.]

A whole new concept of patient care was evolved in the clinic during the year. The "family doctor" has all but disappeared from the American scene, and so has much of the warmth and understanding that he traditionally brought to his job. To try to recapture this spirit, the hospital completely reorganized its medical and medical subspecialty clinics. Under the new arrangement, each patient is under the guidance of one physician, who is responsible for the patient's total care. Patients do not have to shuttle back and forth between various specialty clinics. In contrast to the former custom whereby a doctor was assigned to the clinic for a short period of time, the reorganization of the clinic provides for the continuous and long supervision of a patient by a single physician. [F.L.M.]

In my report last year, I mentioned the establishment of a co-operative laundry by the Hospitals Laundry Association Incorporated. Progress of this organization during the year climaxed in the opening of its plant on Ipswich Street in September 1961. The hospital closed its own laundry at that time, and all of its employees (with the exception of those retained for the distribution of linen within the hospital) transferred to the new plant. [F.L.M.]

Regardless of the inevitable trend toward medical specializa-

tion, it is readily apparent that the personal attitude and interest of the staff of a university hospital can counter, or at least retard, many of these discouraging trends in medical practice. Furthermore there is an obligation on the part of institutions as prominent and important as the Harvard Medical School and the Hospital to point the way and change the present over-emphasis on scientific achievement alone. [G.W.T.]

An integral part of the laboratory work has been the study of tissue transplantation, both at the clinical and experimental level. Two sets of identical twins have undergone successful kidney transplantation during the past year. Transplanted kidneys have survived for longer than normal periods of time in patients who have received an antimetabolite to suppress their immune response, but this problem still remains. [G.W.T.]

During the past year the Medical-Psychiatric Unit has extended the investigation of psychophysiological identity in healthy young men of college age. A correlative study of adrenocortical excretion patterns and personality was carried out on eighteen healthy subjects. Steroid levels were analyzed by the technique of analysis of variance and the Tukey method. Psychological observations included a series of ten interviews with a psychoanalytically-trained psychiatrist. These interviews were all recorded and later discussed at staff meetings. The psychologist carried out projection tests, including the Rorschach, on each individual during a control period and after a night without sleep. [G.W.T.]

In collaboration with Doctor Moore and the Department of Surgery, a program of pre-admission nasal cultures has been instituted in the hope of establishing the presence of potentially dangerous staphylococcal carrier states in patients being prepared for elective surgery. It can thus be seen that considerable attention continues to be devoted to the problem of staphylococcal infection within the hospital. [G.W.T.]

During the seven years that pass following graduation from medical school, a young surgeon evolves from the stage of medi-

cal student whom no one would trust for the ultimate personal commitment of surgical care, into a mature surgeon who exhibits a strong sense of responsibility for human life, and skillful dexterity tempered by judgment. The very members of the staff who have been his teachers would willingly now be his patients and later his students; a segment of the population soon becomes his grateful clientele. The most difficult challenge lies not in teaching surgery, but in achieving this educational result without hazard to the patient. [F.D.M.]

Most medical educators, when gathered together in solemn conclave, bewail the growth of specialization. Generalization is far superior. Yet the same educator, when seized with a primary carcinoma of the bronchus, will inevitably seek out the person who in his opinion has had the most extensive and effective special experience in this field. "No one wants specialization except the patient." [F.D.M.]

1962

The Brigham *Bulletin* lost an enthusiastic supporter and stalwart worker when Bea Murray Chapman retired. . . . Her successor, Mrs. James (Barbara) Hopkins, picked things up in stride and made giant steps in sparking the movement to endow the *Bulletin* with a contemporary look and flavor. [J.B.D., Jr.]

Our Medical Outpatient Clinic has been completely reorganized with the assistance of Drs. Eugene C. Eppinger and James E. C. Walker. Under the new arrangement the Medical Clinic has been subdivided into ten units. Each unit is under the supervision of a senior staff member (director) and an associate director, and in addition includes ten to twelve staff members (visiting staff, senior research fellows, and house staff). Each unit meets one-half day per week throughout the year. The composition of a team remains constant—and patients continue to have their medical needs met and supervised by *the physician who first examined them on admission to the clinic* or as "service" patients in our hospital pavilions. More than 120 of our staff physicians are thus given the opportunity to spend one-half day per week

throughout the year in caring for patients on a general medical basis. With the assistance of expert consultants, seminars, and teaching sessions an effort is made to provide the necessary knowledge so that each physician may effectively deal with the varied problems of the patients which constitute "his practice." The physicians' education, growth, and development in areas not of their special competence is a responsibility assumed by each unit director. [G. W. T.]

§ 19a

IT is difficult to imagine how anyone could describe a serious operation in semi-technical terms and do it, at the same time, with humor and even with delight. The reader well may doubt that the following account by Dr. Merrill C. Sosman (first Radiologist-in-Chief) of his own operation in 1949 is equalled in the range of medical literature. How could it be?

A 58-year-old male physician was brought into our X-ray Department early Saturday morning (when only half of the technical and secretarial staff were on duty, due to that blankety-blank 40-hour-week law) by Dr. Francis Newton. The patient complained of abdominal gripes, dry heaves and a sensation of constant *do-si-do* movements across the solar plexus. He had been awakened at 2:00 A.M. by the revolution in his dining room, and remembered having spent the preceding evening reading a couple of terrible self-advertising medical papers, which had been submitted for publication, as the only logical cause for the gripes. He ruled out the Brighamitis by the absence of diarrhea but had the definite feeling that something was trying to get through and couldn't make it. A self-administered tap-water enema succeeded only in waking his wife, who called Dr. Newton.

After a short and pleasant ride recumbent on the back seat of

the Cadillac, the patient was taken immediately to the x-ray department where a chest film and "flat plates" of the abdomen were taken. The former showed no essential variation from the normal, but the abdominal films revealed dilated loops of small bowel, containing, as Dr. Quinby phrased it, "frustrated flatus."

On physical examination (limited to the abdomen) a constant point of tenderness was found over the sigmoid, and angry peristalsis could be heard in the upper abdomen. Dr. [Eugene C.] Eppinger was called in and completed the P. E., finding nothing noteworthy in the chest. Three rectal examinations discovered nothing but a small amount of tap water . . . guaiac negative. A diagnosis of intestinal obstruction was entertained by all concerned and the wheels were set in motion to correct it. A short history was taken by the assistant resident, omitting only the grandparents and the patient's personal habits. He was then admitted to the lonely confines of C-third, where the T.P.R. were found to be 99°, 74, and 20 and Wbc. 16,300. Next a well-greased garden hose with a balloon on the forward end was shoved through the nose and allegedly introduced into the stomach, and the patient-plus-hose were again transported all the way back to the x-ray department. There he lay on a hard cold fluoroscopic table for 90 minutes while the tube was manipulated up to the pylorus. They met, but were unfriendly, and the pyloric sphincter failed to yield to any blandishments. The patient was therefore wheeled back to C-third, where several orderlies competed for the privilege of shaving the abdomen, for an operation had been decided upon. Somewhere along the route a large needle had been inserted into a vein in the arm and connected to a Dripolator, whence soothing fluids entered his collapsed venous system. After three times around the abdomen with a fairly sharp razor by one orderly, another one then took the patient-plus-hose-plus-Dripolator to the air-conditioned operating suite where Big Bill Derrick awaited him. Bill had been captured like Dr. Eppinger when about to leave the hospital for his usual Saturday afternoon pursuits and, with Dr. [Joseph H.] Marks, several residents, nurses and orderlies organized a cheering section at the operation. But first Bill disconnected the Dripolator

and hooked on a syringe loaded with sodium Pentothal ([Dr. John A.] Abbott) where the patient promptly lost interest in the proceedings.

The operation was short but sweet. Cutting down (surgeons nearly always cut down and rarely cut up) over the tender spot in the southeast corner of the now hairless abdomen, an infarcted appendix epiploica was found, firmly attached to a loop of small bowel, with two other loops of jejunum wedged under the attachment. The offending attachment was cut, the infarcted bit excised, and simultaneously the jejunum and the cheering section gave a big sigh of relief. . . . He awoke on A-third, by some mysterious transfer, the following morning, still with the hose down his nose, the Dripolator still attached and gurgling, and multiple penicillin holes in various areas. He was urged to get out of bed and walk a few steps, which he did with difficulty, particularly the getting out of bed. It took quite a bit of experimenting to learn how to roll out without tensing the abdominal muscles, but it was finally accomplished. Then the various functions were coaxed back into line, with a great sense of achievement when each in turn responded. Coughing and laughing were impossible, and all feeding was done at first through the Dripolator until, on the third day, the garden hose was removed. A single small poached egg without toast was relished as much as one of Antoine's best meals. Then came the flood of flowers, cards and books, visitors and mail, penicillin and vitamins, marred only by the removal of the "stay sutures,"—steel cables inserted to hold the line in case of violent vomiting or coughing. After that the patient further deposes that life on A-third was delightful. [M. C. S.]

§ 20

DR. William H. Smith—Big Bill—of the MGH was inclined to tell his office visitors, when they openly admired some picture or small trinket among his many attractive

possessions, that it came from a grateful patient.* The Brigham's grateful patients, scattered about the world, continually speak out from the heart:

Both Dr. X and his mother [Venezuelan] were overwhelmed by your attention and consideration, and we can not let this opportunity pass away without expressing our deep gratitude for all your kindness.

The atmosphere created in your hospital by the hospital personnel is absolutely terrific. It has been a long time since I have known such a pleasant group of people. They certainly show concern for the patients and loyalty to the hospital and the doctors.

There is a special frankness, a special give-and-take between the interns and their elders at the Peter Bent Brigham. No question remains unasked, no one is afraid to say that a puzzle is puzzling. Such honesty between craftsmen is rare, humane, and hugely reassuring to the man in bed.

I would like to congratulate you and other members of the Board including Interns, Nurses, Nurses Aids, and other personnel for the wonderful treatment I received while there.

Each time [my mother] was admitted to the hospital, we knew that she was in the best of hands. We also know, on the day she died, you did everything humanly possible to ease her pain and to keep her alive.

A woman patient came over to my sister and told her that she was in the recovery room with my niece. She said "I wish you could see the attention that the doctors and nurses gave her."

This sort of operation, as far as I know, could never be accom-

* Big Bill Smith was a famous clinical teacher at MGH and HMS; but as a practising young physician he served as assistant to Dr. Frederick C. Shattuck. Dr. Minot, who frequently referred to simple principles in his own informal lectures, "often recalled the time when a House Pupil asked Dr. Shattuck to see 'an ulcer.' 'Young man,' Dr. Shattuck turned on him, 'if you are thinking about a patient don't you ever call him an ulcer.'" Quoted by Dr. Rackemann, *op. cit.*, p. 134.

plished in this country [India] so successfully. . . . Surely U.S.A. is a different country, where human life counts more than anywhere else in the world.

Sincere appreciation for the marvelous care by the medical and surgical staff which I have always known to be tops, and for the extraordinary atmosphere throughout the entire hospital.

Among the Brigham's famous patients in the past one notes King Saud,† Robert Frost, Leverett Saltonstall, Babe Ruth, Henry Cabot Lodge, Spencer Tracy, Louis B. Mayer, Judy Garland, Al Capp, Nasser's Chief of Staff Salah Salem, Frank Arvuch (better known as Bozo the Clown), and Alexander Woollcott.

† Last year's most spectacular event, if not intellectual triumph, was the Arabian invasion. This occurred in the fall. I was called to Saudi Arabia in November to see the King of Arabia in consultation, he having had a major gastrointestinal hemorrhage. This consultation was also a reunion with Dr. John Wilson of the American University at Beirut (Harvard 1939). We studied the King together and decided that it would be important to move him to a major hospital center in the United States. He elected to come to the Brigham and brought with him many of his family and retainers. The King was in the hospital for approximately two and one-half months. At the height of the influx, it was estimated that there were 95 Saudi Arabians here, either in the hospital as patients, undergoing major or minor surgery, living in the nurses' quarters as the King's wives and retainers, or occupying the entire floor of one of the hotels in Boston.

This was a scenic and colorful event. The morning cardamom seed coffee on A-3rd served by robed Arabian servants in their burnouses and presided over by Miss Bunevith, will long remain engraved in the memory of the Brigham. [And in fair part because Associate Director William E. Hassan speaks Arabic.]

The patient did well. Dr. Trygve Gunderson (PBBH '28) our consultant in Ophthalmology, and long an active member of the Brigham staff, was possibly the most active of the King's many physicians and surgeons, in carrying out two cataract extractions. Other surgery was carried out as needed. Dr. George Thorn was in charge of the King's diagnostic workup and medical regimen. Both the King and his many fellow patients from Saudi Arabia received the full benefits of the collaborative enterprises of the Brigham clinical, radiological, and pathological services.

When finally he left to return to Arabia he had a lighter step, and a lighter view of life with more light on the retina than he had seen for a decade.

Dr. Francis D. Moore: the *Annual Report* (1961-1962) just off the press.

Of all the cults of Classical Athens, the one which (to judge from what survives) received the most dedications year in and year out, through periods of prosperity and periods of distress, was the cult of *Asklepios*. The Priests of *Asklepios* too were chosen in more orderly cycles than were civil officers, so far as we can know. . . . People respected that cult, and didn't interfere with it. Health was always of course a human concern.

STERLING DOW

ALONG the way in a passing footnote, the careful reader may have caught the name of The Friends of the Peter Bent Brigham Hospital, Inc. This dedicated group of women assumed their present title in 1940 to mark the reorganization of the earlier Social Service Committee.* The Friends, now numbering 890 active, life, and honorary members, were incorporated in 1958. In the past twenty-three years the group has had ten presidents—all women. The first and fifth president was Mrs. Roger B. Merriman. The current president is Mrs. Edward E. Hale. Many of the members are wives of doctors; a number of doctors and other men belong.

The work of the Friends—all voluntary—is diversified, highly organized, enthusiastically pursued, and effectively guided through a network of officers, chairmen and co-chairmen responsible for no fewer than twenty-four committees. Ten special events are scheduled for 1963, including several Friends' Teas for Nurses and Brigham

* Social Service, as a Brigham Department with one paid worker, operating in the conventional social service field, dates from 9 September 1914.

Night at the Pops. The President's Annual Report is lively witness both to action and success. In the twenty-two years of its existence, the Friends have given the Hospital \$292,000.

The Friends' activities cover such diverse matters as the Gift Shop; the Art Wagon, providing pictures for patients; the Coffee Shop in the Rotunda already referred to; the library of 2,000 volumes; the Thrift Shop at 656 Center Street, Jamaica Plain. Income-producing enterprises are the Gift, Coffee, and Thrift Shops, Art Tour, and Brigham at the Pops. The Coffee Shop grossed \$74,000 a year ago; the Thrift Shop has shown a recent top month of \$1,164 net. The Landscaping Committee not only looks after the Brigham's unusual collection of trees, vines, and shrubs, but has the soil tested periodically. The Friends run the Hospital TV rentals for a net of \$2,750 or so a year, see to the refurnishing of certain Hospital areas, such as the Rotunda, plan and carry through each year a monumental Christmas party featuring the Chairman of the Board as Santa Claus. "So complex have become the financial affairs of our organization," says Mrs. Hale, "that it [lately] seemed advisable to form a Finance Committee." The Friends occupy an office just off the Rotunda, with an executive secretary available from 9-2 P.M., Monday through Friday.

The Friends of the Brigham belong to "the aristocracy of those who care." For example, the Art Wagon Committee "has opened new horizons for the patients . . . by transforming bare walls with pictures of their choosing." The Nurses Teas Committee will give as many as seven of these genial affairs for student nurses alone. In 1959, the Friends pledged \$100,000 toward the Fiftieth Anni-

versary Capital Fund campaign, to be raised by 1963. The gift was completed in 1962 and given to the Hospital a year ahead of schedule.

§ 2 2

WHEN the Brigham opened in 1913 it was adequately endowed; but before long the Trustees became realistically aware that a university teaching hospital would need special and additional funds for research. Original endowment, however, saw the Brigham through a stretch of almost two decades, with sufficient yearly income to offset the operating deficit. Young and clearly wealthy (glance again at the lines, bottom of page 23) the Hospital did not in that time receive, or even begin to receive, the grateful-patient and generous-citizen gifts which went to the MGH and other older or less well provided for institutions. Roughly, the Brigham's endowment income reached a peak of some \$220,000 in 1928; but by 1936 it was down to \$60,000. What caused the shrinkage?

The answer: original investments of the 1880's (real estate and New England railroads) held too long. Stores, offices, houses, odd parcels of this and that in deteriorating areas (Scollay Square, the North Station region, and some of the smaller streets just a few blocks off the financial district) suffered such a lessening in value in the early 1930's that there was no margin left for refacing or improvement. Book values, one of the great Presidents* of the Board of Trustees tells me, became "a hollow mock-

* Robert Cutler in his early Brigham years followed Ripley L. Dana as Treasurer when Mr. Dana died, 19 December 1939.

ery," as when an Arch Street building carried at \$190,000, on becoming vacant, sold for \$10,000. The so-called gilt-edge investments over the turn of the century included B&M, NYNH&H, Old Colony, B&P railroad stocks and bonds, and the late Boston Elevated. During the twenties and thirties on various gradients they slid toward zero, the Old Colony making it from acquisition value of about 110 to less than one. Meanwhile, the Hospital (always a university teaching hospital) was rising into international prominence: receipts and expenses from the 1920 level doubled and then tripled; but endowment income siphoned into air and "the demands for supplementary income insistently increased."

In 1936, after several early relief campaigns from which PBBH derived some benefit, the dramatically successful first Greater Boston Community Fund Campaign had Ripley L. Dana and Robert Cutler as, respectively, General Chairman and Senior Vice-Chairman of Industry and Finance. These two became Treasurer and Assistant Treasurer of the Brigham; and as Trustees, along with Irvin McD. Garfield, a much respected public trustee, they were appointed a committee to scrutinize real estate and the transportation securities and report with recommendations. Before they set to work, they knew that to continue the portfolio as was might face the Hospital with a minus return the next year, in lieu of a net return of \$150,000 eight years before. With the aid of a capable real estate advisor, the committee recommended that: a) all real estate except three Portland Street mercantile buildings be disposed of; b) mortgages be liquidated in orderly fashion at, or prior to, due dates; c) transportation securities be sold as soon as appropriate and the

proceeds invested in blue chip common stocks. The recommendation prevailed over a few older Trustees who saw recovery of the real estate after the Depression. The Portland Street properties have returned the Hospital something like \$60,000 each year ever since. The proceeds of sale were duly translated into blue chip common stocks which, of course, have multiplied in capital value and in income returned.

There were other elements in the pattern of support "which [says Mr. Cutler] helped the Hospital limp through the prewar, war, and postwar years† down into the middle fifties." Eight of them in particular:

- 1) An initial gift, suggested by Dr. Elliott Cutler, from Mr. Frank R. Tackaberry. This was but a prelude to the testamentary bequests of Mr. Tackaberry and his brother in memory of their mother. Altogether the combined gift of some \$700,000 was the largest received by the PBBH since the founder's original bequest. It established the Fanny R. Tackaberry Memorial Laboratories; and, although restricted, helped indirectly to keep the operating deficit within bounds.
- 2) Annual allocations for twenty-seven years from the Greater Boston Community Fund.‡ In recognition of the special status of a University Teaching Hospital as presented to it by the Trustees, the Community Fund has provided continuing vital support varying from \$100,000 to \$160,000 annually.
- 3) The Blanche Amelia Pearl Fund. As Executor under her will, Boston Safe Deposit and Trust Company was authorized to select a beneficiary and to distribute the residue of the Pearl estate to

† In what Robert Cutler calls the earlier "doldrum years" certain individuals close to the Hospital contributed to offset the relatively small annual deficits. Among these—and I stress the *among*—were William Amory, Professor Theodore Lyman (whose subsequent testamentary bequest was very large), Richard and Anita Curtis, Charles P. Curtis, Alexander Cochran, Richard S. Russell, Benjamin Joy, Frederick Ayer, and various others.

‡ Now the United Fund.

one of the hospitals in the Boston area. The Trust Company appointed a disinterested committee to select the recipient, and asked the hospitals in the community to submit plans for the use of the Fund. The Brigham staff prepared and submitted a comprehensive plan[§] to establish a Geriatric Clinic with expenditure of about \$75,000 to house the Clinic adjacent to the Outpatient Department. The balance of the money, if received, would be used to operate a special clinic for aged people.|| In 1954 the Brigham was selected as the recipient of the Fund amounting to some \$668,591. The Pearl Geriatric Clinic was built and has been in operation for the past nine years.

4) World War II having delayed any possibility of renovation and improvement in hospital facilities, the first concerted effort of the Trustees after 1945 was to raise approximately \$300,000 to install new kitchen facilities on the lower level, removing the old from their loftier pavilion position. Between 1947 and 1953, including the above, more than \$1.5 million for building renovation and improvements came from friends of the Hospital and from the Federal Government under the Hill-Burton Act.

5) Christmas appeals, beginning in 1953. Amounts received have varied from \$7,600 to a high of \$102,667. The 1962 Christmas appeal produced \$42,000.

6) The Hartford Foundation. In 1955 the Hospital, for the first time, was *asked* by a foundation to apply for a grant. The asking foundation had been recently established in New York. Its size, the dollar limit of the invited request, and the purpose for which the grant should be used were all unknown. The name was The John A. Hartford Foundation, and Mr. Hartford (then living) was the head and principal owner of the A & P Stores. The Hospital Staff, again under Dr. Wilhelm's direction, prepared an application: an intensive-care unit of (say) ten beds which, with technicians, extra nurses, and equipment, would cost about \$10,000 a bed per year. It was pointed out that the plan should not be attempted unless funds were available for at least a three-year

[§] Drafted principally by Norbert A. Wilhelm, Director.

|| There was and is a large and growing group of aged people in the Brigham neighborhood.

period. An initial grant for \$300,000 was made, and renewal grants have followed for a total of ten years at \$100,000 a year. The John A. Hartford Foundation has since made other substantial gifts to the Brigham for various purposes, including a major part of the very heavy expenses for medical and surgical research in many of the kidney transplant cases and in other pioneering ventures.

7) In 1955 the Brigham shared (\$125,000) in the Ford Foundation's great benefaction of several hundred million dollars.

8) A 1956 campaign to raise funds for "Endowed Beds for Teaching and Science." A "tiding-over" fund of some \$300,000 was largely raised by Trustee Robert Cutler from friends and patients of the Hospital. Among the large donors to this effort were James H. Rand's Charitable Fund, Alfred P. Sloan Foundation, Inc., Charles E. Merrill, Harold S. Vanderbilt, John Donnelly and Sons, and others. At the same time, through the efforts of Dean Berry, HMS took over a larger share of the salaries of the Hospital's teaching staff.

In its early years the grants and gifts for research at the Brigham increased as the staff became more famous and as pharmaceutical corporations, and the like, began to contribute in increasing numbers.

By the middle fifties, in spite of all gifts and grants, the hospital operating costs rose with the rising spiral of inflation—and at an alarming rate. In 1955, therefore, the Trustees determined on a survey to see if the Hospital was being operated economically and efficiently, and with the same high standards as applied to medical care. The Trustees, eschewing an industrial management firm, employed a group of experts from the School of Industrial Management at M.I.T., under the direction of Professor Thomas M. Hill. A grant of \$39,707 was received from the U. S. Health Service to finance the survey. It was

completed in the two years 1956-1958. Meanwhile, by the summer of 1956, it was clear that the fiscal year ending that 30 September would show an operating deficit of over \$400,000!

Now at that time 85% of the hospital beds were in semi-private and public wards, with only 15% private. There was immediate, desperate need for: a) increased endowment; b) a new Pavilion; c) additional and improved radiology facilities; d) a new blood bank and pathology laboratory. Moreover (says Mr. Barnes) "The whole hospital building had become antiquated." The question: how much could the Brigham raise, and how long would it take to raise the minimum need?

Meanwhile, long years of deficit operations, the added problems of change of business methods and procedures arising out of the hospital study, led Dr. Norbert A. Wilhelm, whose health in recent years had been poor, to resign (30 June 1957) as Director. The "tiding-over" fund had helped; but on professional advice, after a study of the situation which indicated a long-term need of \$7 million to be raised in a series of careful steps, it was decided to conduct a short drive for from \$2 million to \$3 million—one million of it for endowment and two (if possible) for the needs just mentioned.

In order not to violate the terms of the Founder's will respecting the care of sick persons in indigent circumstances residing in Suffolk County, Counsel petitioned for instruction under the will to the Supreme Judicial Court of the Commonwealth, and a decree was granted (30 June 1958) limiting that portion of the Hospital's remaining unrestricted funds to be used for the "indigent sick of Suffolk County," but broadening the charter pow-

ers to care for patients regardless of their place of residence, and to provide specifically broad powers to operate all of the various ancillary facilities necessary to a modern hospital functioning today.

On 15 June 1958 Dr. F. Lloyd Mussells became the new Director. He entered PBBH from the Philadelphia General Hospital (2,200 beds compared with 270 at the Brigham!), of which he was General Director. Under Trustee Richard Hall as chairman, a fund-raising committee went into action in early 1959. Mr. T. Jefferson Coolidge literally guaranteed success when he provided \$1 million *provided* in turn that the Hospital raise a matching sum. This initial and magnificent gift was to be added to unrestricted income. The drive lasted about three months and the results totaled close to the desired \$3 million.

Since Dr. Mussell's appointment, the financial operation has improved each year; and the remarkable report for the fiscal year ending 30 September 1962 showed the Hospital *in the black*, with a "profit" after all expenses—including depreciation and a new reserve of \$86,000 for Employees Pension Fund—of \$5,683. In the 50-year period, current operations of the Peter Bent Brigham Hospital have grown from \$¼ million a year to \$7 million a year without substantial increase in bed capacity.

§ 23

BEFORE we sew up the patient at the close of this typographic operation and put him to bed between clean paper sheets, surely a few sponges, lengths of plastic tube,

and a silver clip or two should be tucked away inside. Such surgical bizarre procedure is the dictate of last-minute information, observation, and plain amnesia. Carroll Fitzhugh of Pittsburgh told me lately, as he headed up the broad reach of the eighties, "I suffer from chronic nostalgia and acute sociability." So the historian must always suffer imperfection.

Item. For fifty years we have carefully accumulated important medical information in our "classical" and extensive Brigham Histories and Examinations; unfortunately this material is so inaccessible and the cost to retrieve it and systematize it so expensive that important correlations which must exist and which would influence our present-day approach to diagnosis and treatment are lost. In the future much of the information, both for in-patients and out-patients, could be made available by "storing" it in an electrical brain. Patient care, research, teaching, and the training of future scientists will all be strengthened immeasurably by the addition to our Department of Medicine of a Division of Mathematical Biology. We are extremely fortunate in having as our director of this new division a mathematician who has already received international recognition for his outstanding contributions in the field. As further evidence of his capacity for leadership, the National Institutes of Health have recently awarded Dr. [Anthony F.] Bartholomay two grants—one of \$76,669 per annum for research, and one of \$68,217 as a training grant—a total of \$144,886 over a period of five years. We are extremely fortunate in being able to establish at this critical period a Division of Mathematical Biology with its tremendous potential for the Medical School and Hospital. Dr. Bartholomay will offer advanced courses in mathematics for graduate students (both Ph.D. and M.D.) as well as undergraduate students. It is our hope that this unit will be instrumental in training individuals for a career in mathematical biology, as there exist today so few scientists interested and capable in this new interface of biology. Dr. George W. Thorn: *The Annual Report* (1961-1962).

Item. Early mention of the four services (medicine, surgery, pathology, radiology) acting as a team has reflected indirectly as the basic counterpoint of this whole essay. Much as the established Brigham doctors (the Chiefs, in particular) hustle about the country and abroad for meetings, lectures, clinics, and on other medical errands, I sense that this team spirit travels with them. Oddly enough, the four Chiefs share (as Cushing shared with his Resident Staff) a common love of tennis; and three of them, a common interest in sailing.

Item (Visual Therapy Division). To produce these printed pages in time for the Hospital's Fiftieth Anniversary Celebration required a certain element of speed and pressure. But omission (top, page 10) of the names of the two Radiologists-in-Chief quantitatively referred to on page 9 was a sudden case of *lapsus calami*, for which there is no cure. For the date record, then: Drs. Merrill C. Sosman (1922-1956); James B. Dealy, Jr. (1956-).

Item. Early annual reports of the Hospital used to list the occupations of patients: diverting to read, and at present a loss to the sociologist who can only speculate on what such a list would reveal today. In the report for 1913-1914 we find, for example, among the males: 24 barbers against 14 bakers, 5 bankers, and 2 bartenders; 28 brokers against 19 chauffeurs, no garagemen, 10 cigar makers, 39 farmers, 7 harness makers, 195 laborers, 20 messengers, 2 stablemen, 1 miner and 59 minors; 49 physicians against 32 policemen; 218 students against 20 teachers and 1 speculator. Among females: 1 cigar maker against 587 housewives, 4 milliners, 28 minors, 79 nurses, 31 seamstresses, 4 secretaries, 14 waitresses, 1 typist.

Item. Far upstairs, a little to windward of the central part of Main, and arrived at by passages and turns which would have delighted Daedalus and puzzled the Minotaur, is a small office, a barber's chair, and Gabriel Spanley. Gabriel is a nephew of Al Terminello, the Brigham's original barber, though Gabriel himself is original enough. "Even though conducted on a fee-for-service basis, his practice has always been in keeping with the traditions of an eleemosynary institution. Where sympathetic

understanding of his patients' resources (hospital patients and house staff alike) has been required, it has not been wanting . . . Gabe's patient roster, past and present [dating from 1936 part-time and from 1945 full-time], is larger than that of any other member of the professional staff." On 16 June 1956, therefore, it was fitting (though overdue) that this delightful man and artisan should receive an informal degree of D.T.A.—Doctor of Tonsorial Artistry.

Item. Dr. Francis Bishop Harrington, A.B. Tufts College 1877, M.D. (HMS) 1881, was a Lecturer on Surgery, HMS, and head of a Surgical Service at MGH. At the time the Brigham was being planned, Dr. Harrington was on a committee advisory to the Trustees. Dr. Burwell (who supplied this interesting information) says it is "the only indication I have that anybody remotely connected with HMS outside of the newly-appointed Brigham staff had any part in its planning."

Item. On the bulletin board in the rotunda, which every day announces a rich medley of gatherings, conferences, symposia, rounds, and the like, the language is odd—often curious in abbreviation and overtone: GYN Rds., D-Main; Anes. Conf., Dr. Vandam's office; G.I. Rds., Main Aphitheater; Med. Tea, Interns' Lounge . . . "Vasopressin Toad Bladder Sodium Transport."

Comment: Would you like a *jump* of sugar?

Item. "In the field of neurosurgery Cushing introduced a number of special operative approaches, such as the transtemporal to the Gasserian ganglion and the transbuccal (through the mouth) approach to the pituitary." John Fulton: *N. Y. Academy of Medicine Bulletin, op. cit.*, p. 895.

Item. Notes on transplants (kidneys). Compatible blood type—always. No age limit set on the donor cadaver for a kidney transplant. One needs a bird dog to hunt out the recipients and a bull dog to go after the donors. The on-call list for transplants is made up six months ahead. The analogy for running all this is in the control tower on the air field.

Item. Down the far end of the corridor to the right from the information desk in the rotunda (an extension of Pike ground level to the east) the visitor will face a brick wall on which is affixed a large plaque bearing this inscription:

TO COMMEMORATE THE
PIONEER WORK OF THE
SURGICAL DRESSING
COMMITTEE
THROUGH THEIR LABORS WHICH
CENTERED IN THIS BUILDING
OCTOBER 1915 TO JUNE 1918
EIGHTEEN MILLION DRESSINGS
MADE BY SIX THOUSAND WOMEN
THROUGHOUT NEW ENGLAND
WERE ASSEMBLED STERILIZED
SEALED IN TINS AND SHIPPED
TO EUROPE FOR THE WOUNDED
OF THE ALLIED ARMIES

Item. In a northern corridor off the Pike at ground level—a passage leading to the operating rooms and a fearful voltage warning just above an orange line across the floor—TEST YOUR CONDUCTIVITY—there are several memorial plaques with well-known Brigham names thereon. One of these plaques honors a Bohemian who was not a doctor but whose memory is revered by doctors, nurses, patients, and by countless others.

THIS PLAQUE IS PLACED HERE IN MEMORY OF
ADOLPH WATZKA
1887-1956
FOR 39 YEARS SURGICAL
ORDERLY TO THIS HOSPITAL
HE DEVOTED HIS LIFE TO THE CARE OF THE
SICK AND TO THE ASSISTANCE OF SUCCESSIVE
GENERATIONS OF SURGEONS OF THIS HOSPITAL

Adolph, who served under all three Chiefs of Surgery, came to the Brigham in 1917. "Signing up as a hospital orderly [wrote

Dr. Francis D. Moore when Adolph died] he soon showed his skill in mechanical things, his extraordinary devotion to work, and his ability to solve difficult problems in the operative handling of patients. . . . He was a big, heavy-boned, homely man who with great strength achieved complete gentleness, telling the patient exactly what to do to avoid pain or discomfort and with a comforting word. . . . In this work he was truly surgical. No move was wasted, nothing was done that was unnecessary. . . . For visitors . . . it was remarkable to see [him] take hold of a patient . . . adjust the table or carry out other steps with no face mask. Adolph felt that a face mask limited the freedom of his breathing and that it was unnecessary if he was careful. . . . [He] made a humble chore into a fine profession, and in so doing taught an important lesson to hundreds of young doctors. . . . Asked by his family what he would like to do if he lived his life over again, he said 'I would like to be a surgeon.' " I never saw Adolph; but I put these words with reverence into this story.

Item. Cushing aphorisms: 1) "The balance sheets of surgery should periodically be audited by those not actually engaged in its practice." 2) "No one can be a good physician who has no idea of surgical operations, and a surgeon is nothing if ignorant of medicine."

Item. *Two Famous Fiftieths*: an editorial in *Surgery, Gynecology & Obstetrics*, February 1963, by Robert S. Myers, M.D., F.A.C.S. "Two venerable and vigorous surgical organizations celebrate their fiftieth anniversaries in 1963, and their courses have been closely intertwined since their founding in 1913. From point of time, the first is the Peter Bent Brigham Hospital . . . which received its first patient on [28] January 1913. The second is the American College of Surgeons, which held its organizational meeting in Washington on 5 May 1913. . . .

"A look at the record in each case reveals the virtues of each organization. As for the Brigham Hospital, these surgical firsts are evident: It established the modern method of progressive residency education and training. The original studies on basal metabolism, later to develop into the method used daily as a

guide in the treatment of goiter, were carried out there. Harvey Cushing, the first Chief of Surgery, established the specialty of neurosurgery, and he was the first to use the electrocautery in surgery. Upon its wards, John Homans developed the field of peripheral vascular surgery, and there Elliott Cutler, the second Chief of Surgery, carried out the first purposeful surgical attack upon chronic valvular disease of the heart. Carl Walter's work upon aseptic technique, performed entirely at the Brigham, has been universally adopted by hospitals throughout the world. Cutler's successor, Francis Moore, has gained worldwide recognition for his research and teachings which have created a new field of clinical study and practical application: surgical metabolism. And the entire Brigham family shares the distinction gained by its recent work upon the artificial kidney and the transplantation of human organs."

Item. "A new and simple diagnostic test for cancer of the kidney and bladder was announced by two medical researchers. The test is expected to lead to earlier diagnosis of such cancer, thus opening the way for more frequent success in curing of the disease. The test, which involves measurement of an enzyme in the urine, is significant because it appears able to signal the presence of cancer or other serious kidney disease before pain and other symptoms arouse suspicion. It opens the prospect of routine mass screening during physical examinations to detect such diseases.

The new procedure was described in the current Journal of the American Medical Association by its developers, Dr. Warren E. C. Wacker of Harvard Medical School, and Dr. Lionel E. Dorfman, University of Toronto surgeon on leave of absence at Harvard, and Peter Bent Brigham Hospital, Boston.

Until now, cancer of the kidney and bladder has often been detected only after it has advanced to an incurable stage. Drs. Wacker and Dorfman estimated that one-third to one-half of such cancers are diagnosed when cure is impossible." *The Wall Street Journal*: 14 September 1962.

Item. A note on the Biophysics Research Laboratory. Were I

able to translate the exceedingly scientific language* of this important area, the increasingly large contribution of Dr. Bert L. Vallee—including a division of Medical Biology recently established under his leadership—would here receive the space and attention it deserves. I seem to remember Dr. Thorn saying that it is in the widening field of biophysics that future Nobel Prizes will be won.

§ 24

HOSPITALS never sleep, though sleep for the patient is the mighty medicine, whether it comes naturally, through exhaustion, or under medication. Prowling through the wards at night, one is aware only of small distresses, dull discomfort, and sometimes of catastrophe which wakes to life the brief batrachian chorus through the microphone for: *Dr. Hasten! Dr. Hasten!* And the doctor, hastening to answer, knows that somewhere there is embolism, fever, fibrillation, or uncertainty. But those who “sleep inside the laundriness of sheets” are unaware. Ginger ale and oxygen, thermometers and rennet, specimens and sedatives, bedpans and digitalis appear and disappear as regularly as breath itself. The piped-in music, private radios, and Hospix portable TV sets (\$1.60 per day, \$9.50 per week) have nothing now to offer eye or ear. In the corner of one ward a malignant red sign warns of *Danger*; but it means, as like as not, that someone with infection is more dangerous to his fellow wardmates than they are to him. Doctor, Nurse, House Officer, or Resident puts on a mask when looking in to see how well or ill he fares. The curtains partly drawn across another

* Or able even to understand it untranslated.

alcove do not quite conceal *No Smoking—No Matches—No Candles: Oxygen in Use*. There, but for the grace of God, lies any one of us athwart the balance that will dip toward life or death. All through the night this patient will reflect the flux of patient-care that keeps him biologically in motion, like a gas engine turning over under the hood. He is alive; and if something checks the thread-like stream of life, momentum sparks him back, and on he goes. Others alive bend over him to see that he is drained, lubricated, fueled, in phase with himself, and aimed to clear the bumps between him and the morning.

Now up and down the Pike the traffic drops to almost nil: a scattering of those off duty—or just going on—inspect the Brighomat. Into Emergency is wheeled some wretched victim of a fight, a hit-and-run, a fire, an overdose of sleeping pills, or of heart-block all his own. The alcoholic Mr. X rides mumbling hither with police escort. For one of them the OR lights are ready; for another, quick the stomach-pump; for Mr. Y is confirmation that he comes too late. All in stride, so regular the pulse is in routine. On such a night—but such a night in recent summer—a pair of idling bats flew in the window of Ward C Second, scaring the attendant nurse. Their teeth were deadly only to a moth, but still she nearly dropped her hypodermic, the only form of acupuncture with which she was familiar.

*So man must light for man
The fires no other can,
And find in his own eye
Where the strange crossroads lie.*

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